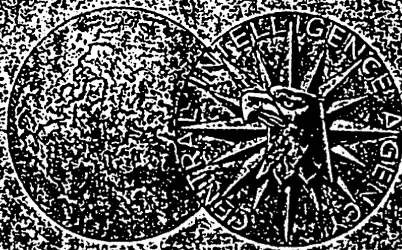


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ABSTRACTING SERVICES AS AN INTELLIGENCE TOOL FOR ASSESSING SOVIET CHEMICAL RESEARCH



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SUMMARY

The scientific and technical publications of a country are a valuable intelligence tool for assessing the fields, trends, and emphasis of scientific activity. All of these are vital factors contributing to the understanding of the scientific potential of a country, but an analysis of such literature will yield useful intelligence information only if the available literature covers the bulk of the scientific work in progress.

In the sensitive area of the USSR it is believed that foreign circulation of certain publications is being curtailed and that quite likely much of the research of the country is not being published. In order to ascertain the facts, a study has been made of a single abstract journal in the United States. *Chemical Abstracts* was selected because it has the most complete access to Soviet publications of any single organization in the United States. Its performance was determined for a prewar year, 1941, and for the postwar years 1947 and 1948. The following conclusions can be drawn:

1. The completeness of coverage has fallen off at an alarming rate. Based on the number of periodicals abstracted, the coverage now is not more than 50 percent of that in 1941. What is even more serious, in the areas covered by organs of the Ministries and by publications concerned principally with the technology of an industry, little or no information is being disseminated in specific fields formerly prolific in abstracts. The value of this abstracting service to intelligence agencies, therefore, has decreased accordingly.
2. In the field of strictly theoretical chemical research, as many journals are now covered and as many abstracts derived therefrom as in prewar years. Spotty coverage is most noticeable in the field of applied research. Here the journals covered are about 40 percent of the prewar number and the abstracts from them are only 35 percent of the prewar number.
3. Curtailed journal distribution to this country confronts the intelligence agencies, as well as research scientists and technicians in general, with the necessity of placing decreasing reliance on abstracts of the published literature of the USSR by commercial agencies, and at the same time presents a challenge to develop alternative sources of information.
4. On the average, nine months elapsed between the publication of an article in the USSR and the publication of its abstract in the United States. For basic intelligence purposes, this time interval is considered to be of little significance.
5. In order to determine the relative value for intelligence purposes of *Chemisches Zentralblatt* and *Chemical Abstracts*, comparisons were made between the two abstract journals. In cases of duplicate coverage, the time interval between publication of an article and its abstract was smaller in the majority of cases for *Chemical Abstracts* than for *Chemisches Zentralblatt*. Even though a detailed study of the relative completeness of coverage of these journals was not made, there is little doubt that *Chemical Abstracts* is superior in this respect.
6. A separate study of Soviet patents shows that the activity in this field is substantially the same now as in prewar years. Incidentally, the sole source of this information, *Byulleten Izobretenii*, has not been received in this country since the December 1947 issue.

NOTE: The intelligence organizations of the Departments of the Army, Navy, and Air Force have concurred in this report. The Department of State had no comment to make.

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ABSTRACTING SERVICES AS AN INTELLIGENCE TOOL
FOR ASSESSING SOVIET CHEMICAL RESEARCH

I. INTRODUCTION

The scientific and technical publications of a country can yield valuable intelligence information as to fields, trends, and emphasis of scientific activity provided the literature available covers the bulk of the scientific work in progress. The principal purpose of the study reported in this paper was to ascertain the current usefulness of commercial abstracting services as an intelligence tool for assessing the scientific potential of the USSR, a country that is known to be restricting the publication of research papers in some fields as well as prohibiting the distribution of certain journals to foreign countries.

The study is confined to the field of chemistry and within that field to *Chemical Abstracts*, because this abstracting service has the most complete access to the Soviet chemical publications of any single organization in the United States.

On the basis of a statistical study of the abstracts of Russian origin appearing in *Chemical Abstracts*, this paper discusses the relative number and type of Soviet journals reaching the United States currently, as compared with a typical prewar year. A detailed analysis is made of the change in coverage in several broadly defined areas. Particular emphasis is placed on the fields of theoretical research, as represented by the publications of the Academy of Sciences, on the one hand, and the fields of applied sciences as represented by the organs of the Ministries, on the other.

Data are presented mostly in the form of graphs that serve to answer the following questions: (1) How much time elapses between the publication of an article and its abstract? (2) How complete is the coverage of some of the large Soviet chemical journals? (3) Is there evidence that the Soviets are restricting publication within their country of the results of research and the distribution of scientific periodicals to foreign countries?

Other principal subjects treated are a comparison of the completeness and promptness of coverage of *Chemical Abstracts* and its companion German journal, *Chemisches Zentralblatt*, and the activity in the patent field as shown by the number of abstracts of USSR patents found for three prewar years and two postwar years.

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II. BASIS OF SURVEY

This survey is essentially one of comparison between the abstracting situation in a typical prewar year and the present. It was not within the scope of this study to evaluate critically the completeness of coverage of the Soviet chemical literature under normal peacetime conditions preceding World War II. Instead, it was assumed that, within the editorial policy of *Chemical Abstracts*, such coverage was of a comprehensive nature, consistent with the enviable reputation that *Chemical Abstracts* enjoys in the chemical profession. Then, as now, the preponderance of abstracts covers theoretical research, and abstracts in related fields appear only when chemical interest is clearly evident. Since the abstracts are intended primarily to serve the research and development workers of the chemical industry, purely trade news and the economic aspects of the industry are not covered. These limitations should never be lost sight of in considering what is said later about the intelligence value of this abstracting service, and they are particularly significant with respect to the comments that will be made on the importance, intelligence-wise, of the time lag between the publication of an article and its appearance in abstract form.

The year 1941 was chosen as a typical prewar year. The controlling factor in this selection was that the interval between prewar and postwar periods be as short as possible and yet not unduly influenced by the disruption in transportation, communication, and research caused by the war. Judging by the number of periodicals abstracted, namely 200 in 1936, 237 in 1939, and 206 in 1941, the war already in progress in 1941, had had little effect, largely because of the time elapsed between the publication of an article and its abstract. For reverse reasons, the survey by choosing 1947 and 1948 for study allowed for a recovery period of about eighteen months after the cessation of hostilities.

The basic data of this survey cover all issues of *Chemical Abstracts* for 1941, 1947, and 1948.

III. EXTENT OF COVERAGE OF SOVIET CHEMICAL PUBLICATIONS

If one accepts as a measure of the completeness of coverage the number of journals from which abstracts are derived in relation to the number estimated or believed to be published, then the extent of coverage of Soviet literature by *Chemical Abstracts* has fallen off at an alarming rate in the postwar period. It will be shown later in this paper that according to official Russian information at least as many journals were published in 1946 which would normally be covered by *Chemical Abstracts* as were published in 1941, while actually only about 50 percent as many were abstracted in either 1947 or 1948, and the number of abstracts derived therefrom decreased in the same proportion. The exact figures are given in Table 1.

Table 1

SUMMARY OF SOVIET PUBLICATIONS

Year	Number of Journals Abstracted	Percent of 1941 Total	Number of Abstracts	Articles Per Journal
1948	110	53%	2,308	21
1947	103	50	2,436	23
1941	206	100	4,935	24

To assess the current value of this abstracting service from an intelligence point of view, it is important to know the types of journals that are missing, particularly whether the journals concerned with specific areas are no longer being as well covered.

In an article on the postwar distribution of scientific research activity the editor of *Chemical Abstracts* said: "The 1947 figure for the Soviet Union is no doubt low. The obtaining of Russian periodicals has been difficult. The principal Russian scientific periodicals are being obtained, but we were late in getting some of the 1947 numbers and we realize that we are not covering the more obscure scientific literature of Russia with the same thoroughness as that of most other countries....." In certain Government circles the same impression exists, namely: Whereas there has been a substantial decrease in the number of Russian scientific periodicals received in this country, the principal ones are still getting through and the loss has been confined mostly to the more obscure journals.

Analysis of the statistics of this survey simply does not confirm this impression, if by "obscure" is meant those journals regularly yielding a small number of abstracts. On the contrary, the effective coverage in the postwar period is deemed to be about the same as would have been the case in 1941 if half of the journals selected at random, had been arbitrarily eliminated. In certain areas, such as those covered by the organs of the Russian Ministries and the institutes under their direct supervision, only 40 percent as many publications are being abstracted now as in 1941, and no information is to be found now in important specific fields formerly prolific in abstracts. Proof of these statements is not a simple matter, but convincing statistical support for them will be found in the detailed discussion which follows.

IV. THE PREWAR SITUATION

Judging from an actual count for the years 1936, 1939, and 1941, the number of Russian journals yielding abstracts remained fairly constant at somewhat over two hundred. A good balance existed between journals dealing primarily with pure research, such as those published by the Academy of Sciences, and others more concerned with applied science and the technology of industry. Many of the latter were organs of the Ministries and somewhat analogous to the trade journals of this country. The editorial policy of *Chemical Abstracts* is broad; about one-third of the journals covered are primarily concerned with related sciences, such as physics, geology, medicine, and biology.

The number of abstracts per journal ranged from 316 for the *Journal of General Chemistry*, published by the Academy of Sciences, to one abstract each for 20 percent of all journals. From 50 percent of the journals ten or more articles were abstracted, and these journals accounted for approximately 90 percent of all the abstracts. Because of the high percentage of total abstracts derived from journals from which ten or more articles were abstracted, the analysis which follows of the types of journals defined by area of interest has been restricted to these, or approximately 50 percent of all the journals studied.

In Table 2, the types of journals have been grouped into four general sections: those concerned with *theoretical chemical research*, which are principally publications of the Academy of Sciences; organs of the Ministries and others that cover *applied research and the technology* of an industry; *medicine* and related subjects; and journals dealing with *physics, geology* and other related sciences. The classification of some of the journals in this table is somewhat arbitrary since the only criteria for classifying them were the titles, except in a few cases where the publisher was known. It will be seen in Column 2 that in the strictly chemical field, the number of abstracts is about equally divided between pure research and what might be called applied science. It is interesting to note, however, that the number of journals covering pure research is only about one-fourth the number in the field of technology, which makes the abstracts per journal relatively high, on the average 108, as compared to 31 abstracts per journal for the technical journals.

TABLE 2

TABLE 2

TYPES OF JOURNALS AND NUMBER OF ABSTRACTS
(Journals with 10 or more abstracts)

Types as Defined by Area of Interest	1941					1947-1948*					Fraction of 1941 in 1947 and 1948	
	No. of Journals	No. of Abstracts	Percent of Total	Abs Jour	Abs Total	No. of Journals	No. of Abstracts	Percent of Total	Abs Jour	Abs Total	Journals	Abstracts
I Academy of Sciences publications and others primarily covering theoretical chemical research	12	1288	12	28	117	12	1300	23	50	108	1.00	1.01
II Organs of the ministries, applied research, technology of an industry	51	1762	53	39	35	20	596	38	23	30	.39	.34
III Medicine, biochemistry, biology, pharmacology, toxicology, & physiology	21	815	22	18	39	13	462	24	17	35	.62	.55
IV Physics, geology, and other related sciences	13	697	13	15	54	8	237	15	10	31	.62	.35
TOTAL	97	4562	100	100		53	2595	100	100		.55	.57

* The values in these columns are based on a consolidation of the specific data collected for the years 1947 and 1948. The totals shown in the second column contain some estimated values instead of the actual count in either year. The estimates are based upon a critical inspection of the relation of the abstracts actually found to the pages and probable number of issues for the year.

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V. CHANGES IN THE POSTWAR PERIOD

1. The Statistical Picture

The extent to which coverage of the chemical literature has decreased in the postwar years, is indicated in Table 1, page 3, which shows that the number of journals abstracted, as well as the number of abstracts derived therefrom, has decreased about 50 percent but at the same time the number of abstracts per journal has remained nearly constant. This, in itself, is a strong indication that the journals no longer covered are fairly evenly distributed throughout the range of those producing a high number of abstracts and the ones yielding only a few. But it does not constitute proof, because a loss of a large majority of the journals at the low end of the range could have occurred concurrently with a general decrease in the number of abstracts derived from the larger journals, in which case the average articles per journal would still remain constant. However, graphical analysis of the data upon which Table 1 is based clearly demonstrates that the former is true, and the latter is not.

Graphs were made for 1941 and for 1947-1948, showing the distribution of journals in descending order by number of abstracts derived from each journal. Because the data for 1947 and 1948 were so nearly alike a single value for the number of abstracts for each journal was selected, in some cases the actual number counted in one year or the other, and in others a number estimated to be representative of a year's number for the specific journal. The estimates were based upon a critical inspection of the relation of the abstracts found to the number of pages and probable number of issues for the year.

These graphs were then transposed to a percentage basis, relating the percentage of total abstracts to the percentage of total journals yielding these abstracts. These latter curves are practically identical, which must mean that the "missing" journals, that is, the ones no longer available for abstracting, were distributed fairly evenly between those yielding a large number of abstracts and those a small number. As confirmation, of the journals abstracted in 1941 every other one was arbitrarily eliminated and similar curves were made based on the remaining journals. These curves were almost identical with the ones representing the journals being abstracted currently, although there was some indication that the number of journals missing in 1947-1948 was somewhat greater from the area of journals supplying a medium number of abstracts. It follows that, intelligence-wise, *Chemical Abstracts* is less valuable than would be the case if these "missing" journals were the obscure ones.

The graphs discussed here are not reproduced in this paper. However, data from them are collected in Table 3, page 7, showing the cumulative number of abstracts and the percent of total abstracts for each 10 percent of the total journals covered in 1941, 1947-1948, and under assumed conditions where every other journal covered in 1941 was arbitrarily eliminated. The similarity of the three sets of values is convincing support of the statement made earlier that the effective coverage of the literature in postwar years is the same as if every other journal available in 1941 had not been abstracted.

The reasons for the large decrease in the number of journals abstracted in the postwar years can only be surmised; possibly a combination of the following: (1) embargo on foreign dissemination of certain journals (security measures); (2) a general consolidation and more stringent standards; and (3) disruption of the printing industry and lack of supplies, as a direct consequence of the war.

The only known facts are that numerous journals, particularly those concerned with the interests of the Ministries and covering an industry, ceased publication during the war, and, according to an official Russian source, publication had not been resumed in 1946 nor had new publications started up to cover the same field. Typical areas of interest no longer covered are, to sight a few: Leather and Shoe Products Industry, Oils

TABLE 3

PERCENT OF TOTAL ABSTRACTS DERIVED FROM SPECIFIED PERCENTAGES
OF TOTAL JOURNALS ABSTRACTED

Percent of Total Journals	Data Observed for Prewar and Postwar Years				Similar Data Based on the Arbitrary Elimination of Every Other Journal Abstracted in 1941	
	Cumulative Number of Abstracts		Percent of Total Abstracts		Cumulative Number of Abstracts	Percent of Total Abstracts
	1941	1947-8	1941	1947-8		
10	2848	1807	53.7	55.8	1200	51.3
20	3813	2184	73.2	74.9	1655	70.8
30	4100	2454	83.2	84.9	1900	81.2
40	4423	2588	89.8	89.2	2063	88.2
50	4627	2698	93.8	93.4	2172	92.9
60	4752	2776	96.4	96.1	2240	95.9
70	4836	2827	98.1	97.9	2285	97.8
80	4887	2880	99.2	99.0	2314	99.0
90	4910	2877	99.6	99.6	2329	99.6
100	4930	2889	100.0	100.0	2339	100.0

and Fats, Caoutchouc and Rubber, Coke, Silk, and the Cellulose Industry. In a few instances subscribers have been notified that a journal was no longer available, when it was known that the journal was still being published.

2. The Nature and Type of Journals No Longer Covered

In addition to the broad changes in coverage in the postwar period, already discussed in the preceding section, the material collected in this survey provides rather complete specific information as to the types of journals that are no longer covered and the changes in the number of abstracts concerned with particular areas of interest.

The prewar situation, as summarized in Table 2, has already been reviewed. It was pointed out that a good balance existed then between abstracts reviewing theoretical research and those covering industrial technology, and that nearly 40 percent of all abstracts was derived from the related sciences of medicine, biology, physics, and so forth. This is not the case in the postwar period.

The right-hand side of Table 2 lists data for 1947-1948, which, when compared with 1941, show several important changes in the pattern of coverage.

Before discussing these changes it should be pointed out that the source of Russian chemical abstracts is dominated by five large journals, each a publication of the Academy of Sciences, which supply about 1,000 abstracts per year. In the prewar period these thousand abstracts represented 20 percent of the total abstracts derived from Soviet journals producing ten or more per year; but in postwar years they account for nearly 40 percent.

These large journals and seven others primarily covering theoretical chemical research are grouped together in Class I of Table 2. It will be seen that the number of abstracts derived from this type of journal is now almost exactly the same as prewar, and the number of journals is the same. The percentage of total abstracts from this class of source has of course increased greatly, in fact, from 28 percent to 50 percent due to the decrease in the total number of abstracts. The regular receipt of these journals in this country, together with receipt of a smaller number of prominent journals in the other classes, may well be the principal reason for the widespread impression that the important journals are getting through and that only the "obscure" ones are not being covered.

Turning now to Class II, which covers organs of the Russian Ministries and journals concerned with applied research or the technology of an industry, the situation is quite different, seriously so from an intelligence point of view. The number of journals covered as well as the number of abstracts derived from them is about one-third of the prewar number; at present instead of a fairly balanced coverage between pure research and industrial technology, there are only half as many abstracts in the latter field as there are in pure science. What is even more important, as will be found detailed in Appendix 2, at least 20 important industries are no longer heard from at all.

In medicine, biology, and related fields, Class III, the loss of coverage in the postwar period is not so alarming as in the case of applied research. There appear to be no specific areas not covered that were formerly. Broadly speaking, the same territory is covered by fewer journals and about half as many abstracts. As in Class II, the number of abstracts per journal has decreased only about 10 percent which is quite likely a rough measure of the extent to which scientific activity has recovered since the war.

Changes in Class IV are difficult to analyze because of the heterogeneity of the fields included. The number of abstracts per journal is off three to four times as much as in the preceding two classes, in part due to a marked decrease in the abstracts covering physics. In view of the fact that research today in many fields of physics may have a

direct bearing on the military security of a country, it is suggested that the trend observed here may be the result of restriction upon publication. It deserves watching, and perhaps a special study from an intelligence point of view.

The reader interested in the details from which the data in Table 2 were obtained is referred to Appendixes 1, 2, 3, and 4. The data for 1941 were derived by adding the values under each part in Appendixes 1 and 2; for 1947-1948, Appendixes 3 and 4.

For detailed information as to just what areas of applied research and industrial technology are no longer covered, he should compare Parts II of Appendixes 2 and 4. The first lists the journals covered in 1941 but not in 1947 or 1948, while the second gives an analogous list of journals that have only been abstracted in postwar years. Forty-two journals were "lost" during the war years and only ten new ones have been "picked up." The number of abstracts from the new journals was only 16 percent of those from the "missing" 1941 journals. Incidentally, these relationships are practically the same for all journals listed in the various parts of these appendixes. Between 1941 and 1947 or 1948, 64 journals that gave ten or more abstracts in 1941 were no longer abstracted. Seventeen new journals were added to replace the 64 lost. These gave 336 abstracts, or 17 percent of those derived from the 1941 journals "lost."

A word of caution is in order concerning the use of the detailed data in the appendixes. Whereas the summary data presented in the body of the report reliably show postwar changes, the data for any one journal or for several journals can be quite misleading. There are a variety of reasons for this, such as the difficulties of transportation, editorial bottle-necks within the *Chemical Abstracts* organization, and consistent lags in abstracting which have been observed in certain fields. This point will be emphasized in a later part of this report, when the subject of patents is discussed.

VI. JOURNALS PUBLISHED IN 1946 IN THE USSR BUT NOT
ABSTRACTED BY CHEMICAL ABSTRACTS IN EITHER 1947 OR 1948

Because it has been seen from Table 2 that the number of journals abstracted in 1947-1948 is only 55 percent of the number abstracted in 1941, one should not conclude that publications in Russia have necessarily fallen off to this extent. Late in the progress of this survey there came to the attention of the authors an official Russian index of all of their publications in 1946. The list of journals scanned for abstracting by *Chemical Abstracts*, according to its published lists in 1936 and 1946, was compared to this official Russian index. In addition to the journals already listed in this survey, known to be in existence in 1947 and 1948 because they were abstracted, 119 other journals were found.

In order to ascertain whether these journals were not abstracted because they were not received or because there were no articles of chemical interest in them, this list was submitted to the Foreign Documents Branch of CIA for checking. FDB reported that 16 had been received by the Library of Congress, but its records did not show whether these had been received or were even available to *Chemical Abstracts*. The others were not received through any official sources known to it.

Therefore, 103 journals remain, which, if they could be obtained for *Chemical Abstracts*, might be expected to add a substantial number of abstracts to the 2,595 shown in Table 2 for journals received in 1947 and 1948 yielding 10 or more abstracts.

In Appendix 5 will be found a partial list of these journals classified in the same four categories as in Appendixes 1 - 4. The list is a partial one conforming insofar as possible to those in the other appendixes, which are confined to journals yielding ten or more abstracts. Since these journals have never been received in this country, one can only make an indirect estimate as to the number of abstracts which they would probably yield. Fifteen of the journals on the list gave more than ten abstracts in 1941, and these are indicated by an asterisk. Twenty-eight additional journals giving fewer than ten abstracts per journal are not included in the list.

The 15 journals abstracted in 1941 and yielding more than ten abstracts, gave a total number of abstracts in that year of 354. Assuming the same proportion of journals yielding more than ten abstracts for the remaining 60 journals, there would be 21 in this group. This added to the 15 gives 36 journals in the list which it is reasonable to presume would yield more than ten abstracts per journal. Referring to Table 2, it will be seen that 53 journals of this class were in fact abstracted, which, plus the 36 in this list, gives 89 or 92 percent of the number abstracted in 1941 as the total number of journals that *Chemical Abstracts*, according to its own records, would cover if the exchange conditions were the same as in prewar years.

The number of abstracts to be expected under these conditions is more difficult to estimate. The 15 journals that were abstracted in 1941 gave 354 abstracts, or 24 abstracts per journal. There is some evidence to show that scientific activity in Russia, as measured by the number of abstracts in various journals, has fallen off 10 to 15 percent. If this pertains for these journals, then one might expect an average of 21 abstracts per journal; and if the other journals in the list may be presumed to give the same number per journal, then 36×21 gives a total of 750 abstracts to be expected from these journals. This is nearly a third more than the 2,595 shown in Table 2, an increase of 29 percent, bringing the total, if these journals were available, to 73 percent of the number abstracted in 1941.

Inspection of Appendix 5 will show that were these journals available several additional industrial areas would be covered; to name a few, the aviation industry, industrial building materials, and the textile industry. In addition, the very important area of basic and applied research institutions would be better covered by the addition of 11

publications to the list of those now abstracted. In the field of medicine, biology, and related sciences, Class III, the number of periodicals covered would be almost double the prewar figure, and four rather important journals would be recovered.

With respect to applied research and industrial technology, Part II of Appendix 5, the over-all figures of 92 percent recovery of the number of journals abstracted in 1941 and 73 percent of the number of abstracts in 1941 were these journals available, are quite misleading. Comparison of Part II, Appendixes 5 and 2 will show why. Both lists contain many periodicals which are organs of industries, and which, judging from their titles, cover the business of particular industries. In Appendix 2 there are 25 such periodicals, whereas in Appendix 5 there are only 5. Consequently, even if all of the periodicals in this field known to be published at present were acquired they would account for only 20 percent of such journals existing in the prewar period. Moreover, numerous important and key industries would not be covered.

There is reason to believe that the number of journals listed in Appendix 5 is a minimum of those published in Russia that may be expected to contain articles of a chemical interest and that would normally be abstracted by *Chemical Abstracts* under their editorial policy. This list of journals is based upon official lists of *Chemical Abstracts* in 1936 and 1946 of the journals which they scan for abstracting. Examination of the journals actually abstracted in 1936 shows that 10 percent of these did not appear on either of the above lists, and in 1941 this figure had risen to 23 percent. Considering the unsettled conditions associated with the war, it is unlikely that *Chemical Abstracts* has been able to keep track of the journals published in Russia any better than it did in the prewar years.

The analysis just presented should be a challenge to the Intelligence Agencies to increase their efforts in the collection of foreign journals. Not only would the intelligence value of the overt literature in the field of chemistry and related sciences be increased accordingly, but if journals collected be made available to *Chemical Abstracts*, the scientists, engineers, and designers in this country would benefit, particularly those in the Service agencies responsible for keeping abreast of the scientific and technical developments within the USSR.

VII. TRENDS OF SOVIET CHEMICAL RESEARCH

One of the purposes of this survey was to show the volume and trends of postwar chemical research by means of a detailed study of the number of abstracts by the categories used by *Chemical Abstracts* and set forth in Table 2. The information collected for this purpose is summarized in Figure 3, page 61 for both journal and patent abstracts, and corresponding data for journal abstracts alone are shown in Appendix 10.

However, in view of our previous discussion, it is evident that, with many large journals no longer covered, with no new ones to take their place, and with whole areas formerly prolific in abstracts no longer covered, the comparisons shown in Fig. 3 cannot be considered reliable criteria of the changes in emphasis of postwar Soviet chemical research. In fact, it is entirely likely that any such trends are altogether obscured by the decreased coverage of the postwar scientific literature. For example, attention is called to five categories where the number of abstracts in 1941 exceeded 100 and the abstracts in 1947 and 1948 were less than one-third of the prewar volume. These are: No. 12, Foods; No. 13, Chemical Industry; No. 14, Water, Sewage, and Sanitation; No. 16, Fermentation Industries; and No. 26, Paints, Varnishes, and Lacquers. It is indeed difficult to imagine any factor that would cause any such decrease in the actual activity in these fields, such as security reasons or special conditions in the postwar period. On the other hand, these categories do have this in common: abstracts in them would be concerned primarily with the technology and applied science of the industries involved and reference to Appendixes 2 and 13 shows that one or more journals in each field ceased publication during the war and that no new journals have taken their place.

VIII. COMPARISON OF CHEMICAL ABSTRACTS AND CHEMISCHES ZENTRALBLATT

This section compares the service rendered to intelligence agencies by *Chemical Abstracts* and *Chemisches Zentralblatt*, and is concerned mainly with the time elapsed between publication of an article and its abstract, and the relative completeness of coverage of a few selected USSR journals.

Next to *Chemical Abstracts*, the most important abstract journal in chemistry is *Chemisches Zentralblatt*. It is published in two editions: one in the American Zone of Germany and the other in the Soviet Zone. Publication of the American edition began in November 1946 under authorization of the Military Government and the first issue appeared on 7 January 1947. Offices have been established in Heidelberg and in Berlin. The Soviet edition has offices in Berlin and Langenzala; it is mailed from the latter city.

From the masthead of the American edition it appears that abstracters are active in all four zones. Most of the abstracts, however, are contributed by the editors and the assistant editors of the journal, all of whom reside either in or near Berlin or Heidelberg.

1. Elapsed Time Between Publication of An Article and Its Abstract

In order to understand any comparison between these two abstracting services certain significant differences between them must always be borne in mind.

In the first place, a large percentage of the abstracting for *Chemisches Zentralblatt* is done by members of the editorial staff in the United States Zone, whereas for *Chemical Abstracts* the journals are reviewed by abstracters working on a part-time basis and often at some distance from the publishing plant.

A second important difference is a practice in the publishing of *Chemisches Zentralblatt* that is almost incomprehensible to an American. For example, the date on the cover of Issue No. 1/2 was 8/15 January 1947, whereas the actual date of publication, the publisher's date, was 12 March 1947, an interval of two months. This interval varies widely, as will be seen from Appendix 6 where detailed data are given for Volumes 1 and 2 of 1947 and part of Volume 1 for 1948. The interval between cover date and publisher's date gradually increased from two months to six months. This practice is the same as if an issue of *Chemical Abstracts* were actually published and distributed two to six months later than the date on the cover.

These two factors tend to counteract each other. With the abstracting for *Chemisches Zentralblatt* largely in the hands of the editorial staff, the time interval between the receipt of the Soviet journal and the publication of the abstracts (if one is to judge by the cover-date of an issue) is, often unusually small; in fact, in some cases only days elapsed between publication of an article and the cover date of the issue in which its abstract was found. But with the gradually increasing time lag between the time that this journal was supposed to come out and the time that it was actually issued more than offsets the fast work by the editorial staff as will be seen by reference to Figs. 5 and 6, which compare the time interval between the publication of an article and the appearance of its abstract in *Chemisches Zentralblatt* and *Chemical Abstracts*.

Figure 5 compares the months elapsed on a percentage basis. In constructing these graphs, the one for *Chemisches Zentralblatt* is based upon the publisher's date to make it comparable to the one for *Chemical Abstracts*, where the cover date and the publication date are identical. There is little to choose, from the point of view of promptness of abstracting, between these two services. *Chemical Abstracts* is prompter for approximately 50 percent of the total abstracts, but this advantage is lost because it takes longer to get the remaining 50 percent of the abstracts into publication. Moreover, the curves really compare the availability of abstracts in Germany after a specific time with abstracts in

this country after the same period of time. To confine the comparison to this country would, of course, work to the disadvantage of *Chemisches Zentralblatt*. In the case of both journals, the average period of time elapsed between the publication of an article and the appearance of its abstract is approximately nine months, and, at that time, 50 percent of the total abstracts have already appeared in print.

Figure 6 is based upon the same data as Fig. 5, but shows the percentage of the total journals that have appeared in print after any given number of months. It is interesting to note that *Chemical Abstracts* succeeds in getting the bulk of its material abstracted in between 7 to 13 months after the article has appeared originally. The peak is at eight months when 24 percent of the total abstracts has been printed. Principally because the editorial staff of *Chemisches Zentralblatt* does much of the abstracting, this service manages to get 5 percent of the abstracts in print in 5 months, 12 percent in 6 months, and 25 percent in 7 months as compared with 1 percent, 2 percent, and 8 percent respectively for *Chemical Abstracts*. But the advantage in this area of the curve over the performance of *Chemical Abstracts* is lost for over-all considerations by the longer period required for other abstracts. The graphs for *Chemical Abstracts* in both figures are based on an average interval of three months between the cover date and the publisher's date. Were similar curves to be drawn on a current basis, as Appendix 6 shows, in both figures each point on the graph for *Chemisches Zentralblatt* would be moved to the right by three months. This means that currently *Chemisches Zentralblatt* is that much less suitable as an intelligence tool than is *Chemical Abstracts*.

Chemical Abstracts renders a service designed primarily to serve the research and development workers in the United States. Trade news and the economic abstracts of the chemical industry are not covered by this service. Since it is always a matter of a few years up to a period of as much as 10 years or more before discoveries in theoretical and applied science result in producing a new commercial product or in the introduction of a new process, the authors firmly believe that unlike economic, political, and trade information, a lag of 9 to 17 months in the receipt of the type of subject matter covered by *Chemical Abstracts* does not detract materially from its intelligence value.

2. Completeness of Coverage and Time Required for Publication of Abstracts from Five Important Soviet Journals

Five important Soviet journals were selected for this study. Those selected were *Acta Physicochimica*, *Journal of Applied Chemistry*, *C. R. of the Academy of Sciences of the USSR*, *Journal of General Chemistry*, and *Journal of Physical Chemistry*. Figures 7 through 11 show the results of this survey.

The average time consumed in shipping the journals from the USSR to the United States was approximately 4.5 months but varied from as little as two months to as much as seven months. The average time required by *Chemical Abstracts* to publish the abstracts was somewhat more than three months and varied from three weeks to eleven months. Thus, on the average eight months elapsed between publication of an article in one of the five Soviet journals studied and publication of its abstract by *Chemical Abstracts*. In all cases, except one, *Chemical Abstracts* received the journal issue before the Library of Congress.

Considerable improvement in the speed with which abstracts are published could be achieved, therefore, by expediting the shipment of the journals, by increasing the number of abstracts, and by increasing the number of copies of the journals received in the United States.

The average time which elapsed between publication of an article in the five Soviet journals studied and publication of its abstract by *Chemisches Zentralblatt* was approximately nine months. Consequently, as was found by the general survey, little difference in speed of coverage existed between the two journals.

Table 4 gives a summary of the data contained in Figures 7 through 11.

Table 4

SUMMARY OF COMPARATIVE SERVICE RENDERED BY CHEMICAL ABSTRACTS
AND CHEMISCHES ZENTRALBLATT FOR FIVE SOVIET JOURNALS

Total number of Soviet articles abstracted in C.A. C.Z. or both	671
Number of abstracts in <i>Chemical Abstracts</i>	645
Percentage of abstracts in <i>Chemical Abstracts</i>	96%
Number of abstracts in <i>Chemisches Zentralblatt</i> (U.S. Zone)	187
Percentage of abstracts in <i>Chemisches Zentralblatt</i>	28%
Number of abstracts appearing in both C.A. and C.Z.	163
Number of abstracts published in less time by C.A. than by C.Z.	75
Number of abstracts published in less time by C.Z. than by C.A.	57
Number of abstracts that publishing time for both journals was equal	31

Of the total number of articles abstracted, *Chemical Abstracts* covered 96 percent and *Chemisches Zentralblatt* only 28 percent. Thus, it can be seen that *Chemical Abstracts* provided fuller coverage of these journals, and in 65 percent of the cases of joint coverage it equaled or bettered *Chemisches Zentralblatt* in the time required to publish the abstracts. It is apparent that only a few abstracts of Soviet articles are available in Germany at an earlier date than in the United States.

It may be concluded that *Chemical Abstracts* is a sufficient source for coverage of the Soviet chemical literature of the journals available to it.

IX. SOVIET CHEMICAL PATENTS

Information on the patents issued by the USSR can be obtained from their periodical *Bulleten Izobretenii*, which corresponds to the *Patent Gazette* of the United States Patent Office, or from examination of the patents themselves. Patent abstracts appearing in *Chemical Abstracts* are derived from an examination of the above-mentioned bulletin.

In Fig. 4 the number of Russian chemical patents appearing for each year from 1935 to 1948, inclusive, is shown graphically. Horizontal lines in this figure have been drawn to show the average number of patents abstracted per year: (1) for the entire period (294); (2) for an average five prewar years, 1936-1940, (436); (3) for an average during five war years, 1941-1945, (187); and (4) for three postwar years, 1946-1948, (235). Judged by the number of abstracts, the activity in postwar years appears to be about half that of the prewar years. But as was pointed out earlier in this paper the correlation between the number of abstracts appearing for a single journal and activity in a field can be very misleading because reflected in these data are various factors such as transportation difficulties, bottlenecks within *Chemical Abstracts* editorial office, and other factors which may affect the abstracting of a single journal. Figure 4 should be studied, and the values used, with these limitations clearly in mind. How misleading the use of these data can be, will become more significant later on.

A separate study was made of the Russian chemical patents in which the time lag for the abstracts to appear was eliminated. This study shows that the bulletin was not received in this country (more likely not published) between May 1941 and January 1945. Complete volumes are available for 1945, 1946, and 1947, but receipt of the journals stopped with the December 1947 issue, quite likely because of the suspected embargo on certain types of Soviet industrial literature.

The abstracting of this journal by *Chemical Abstracts* has been quite erratic, with the time required for a patent to appear in abstract form varying between one to five years from the patent issue date. The reasons for this wide variation are not known. As one specific example, the case of the December 1947 issue can be cited. This issue was received by the Library of Congress on 8 August 1948, yet not a single abstract from it appeared in the following year.

A summary of the number of chemical patents issued each year in the USSR is shown below in Table 5.

Table 5

SUMMARY OF CHEMICAL PATENT ABSTRACTS

Year	Number of Chemical Patents	Average per Month
1938	360	30
1939	317	26
1940	392	33 (average per month prewar = 31)
1941 (four months)	158	39 (average per year prewar = 368)
1945	241	20
1946	483	40 (average per month postwar = 30)
1947 (four months)	127	30 (average per year postwar = 360)

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Contrary to the impressions of activity in the patent field to be derived from Fig. 4, it will be seen here that postwar activity is substantially the same as prewar activity, the average per month for three prewar years and for two postwar years being 31 and 30 respectively. Detailed data upon which Table 5 is based are found in Appendix 7, which shows the number of chemical patents issued in each month for three full prewar years, together with information available for the postwar years. The year 1946 is believed to be substantially complete and may be compared directly with the completed data for the three prewar years. However, considering the frequent long-time lag before abstracts appear, there is no assurance that the postwar figures are complete.

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X. RESTRICTION IN PUBLICATION AND POSSIBLE EMBARGO
ON CHEMICAL PERIODICALS

As in the case of trends in chemical research, the data of this survey are simply not adequate for determining whether there is any substantial restriction in the publication of research findings or whether certain journals are subject to an embargo on foreign distribution. It is known that in 1947 an official decree stipulated that nothing should be published that was inimicable to the security of the State, and one can only presume that, considering the severe penalties associated with this decree, a decrease in publication has occurred in certain fields. Confirmation of this assumption would require a study more detailed than this one. Based on the main journals of the Academy of Sciences, it is believed that such a study is entirely practicable and would give positive information.

Statistically speaking, the decree against publication has had no apparent effect. For example, the 33 journals which were abstracted in either 1947 or 1948 and also in 1941 gave 2,587 abstracts in 1941, and 2,212 abstracts in 1947-1948, 86 percent of the 1941 volume. There is no evidence to show that this decrease in publication is not the result of the upset conditions during the war and it may be a good measure of the extent to which research in Russia has recovered since the war. Incidentally, this 86 percent can be compared with a world-wide trend amounting to a 65 percent recovery in publication for 1947 as compared with 1938.

Statistics on the effect of the 1947 official decree stipulating that nothing should be published inimicable to the security of the State can be very misleading. For example, whereas the number of abstracts in certain selected journals in the prewar and the post-war periods has held up as well as could be expected, it may well be that the subject matter treated in these articles has been substantially restricted because of this decree, and that, therefore, their importance for intelligence purposes has been considerably lessened. The data upon which this paper is based do not cover this point.

Specific instances can be cited where a journal known to be published in Russia is not available to certain subscribers in this country. There is, however, no evidence that shipment in these cases was prohibited. On the contrary, examination of the *Annual of Periodic Publications, USSR, 1946* lends considerable support to the idea that restrictions on the receipt of Russian chemical periodicals in this country is caused principally by the limited number of copies that are printed of a great many of the journals. What appear to be important journals may be published with only two to three hundred copies. There is no reason to believe that this restriction on the number of copies is for any reason other than shortage of paper, printing facilities, and the like caused by the disruption of the war.

APPENDIX 1

SOVIET JOURNALS PRODUCING TEN OR MORE ABSTRACTS
IN 1941 AND ABSTRACTED IN 1947 AND 1948

<u>Position</u>	<u>Journal No.*</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1941</u>
PART I. Publications of the Academy of Sciences and Others Primarily Covering Theoretical Chemical Research			
1	65	Journal of General Chemistry (USSR)	316
2	78	Reports of the Academy of Sciences, USSR	253
3	68	Journal of Applied Chemistry (USSR)	218
4	69	Journal of Physical Chemistry (USSR)	108
5	67	Acta Physicochimica URSS	102
6	39	The Colloid Journal (USSR)	90
7	79b	Bulletin of the Academy of Sciences, URSS, Section of Chemical Science	66
8	40	Reports of the Institute of Chemistry, Ukrainian Academy of Science	40
9	79e	Bulletin of the Academy of Sciences, URSS, Section on Science Technology	23
Subtotal			<u>1,216</u>
PART II. Organs of the Ministries, Applied Research, and Technology of an Industry			
1	66	Industrial Laboratory	160
2	17	Non-ferrous Metals	80
3	36	Advances in Chemistry	51
4	74	Fireproof (or Refractory) Materials	42
5	71	Steel	28
6	22	Petroleum Industry	16
7	9	Paper Industry	16
8	51	Engineers' and Technicians' Review	15
9	48	Autogenous Industry	10
Subtotal			<u>418</u>
PART III. Medicine, Biochemistry, Biology, Pharmacology, Toxicology, and Physiology			
1	12	Microbiology (USSR)	146
2	43	Bulletin of Experimental Biological Medicine (USSR)	100
3	27	Biochemistry	86
4	117	Biochemical Journal (Ukraine)	52
5	103	Pharmacy	40
6	76	Pharmacology and Toxicology	39
7	99	Journal of Physiology USSR	13
8	30	Clinical Medicine	11
9	79c	Bulletin of the Academy of Sciences, URSS, Section on Biology	11
Subtotal			<u>498</u>

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APPENDIX 1 (Continued)

<u>Position</u>	<u>Journal No.*</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1941</u>
PART IV. Physics, Geology, and Other Related Sciences			
1	72	Journal of Experimental and Theoretical Physics (USSR)	131
2	77	Journal of Technical Physics (USSR)	110
3	55	Pedology (USSR)	102
4	79a	Bulletin of the Academy of Sciences, URSS, Physics Section	76
5	70	Journal of Physics (Moscow), Academy of Sciences, USSR (Continuation of Technical Physics of USSR)	22
6	187	Transactions of All-Union Academy of Rural Economy Scientific Research Laboratory	14
Subtotal			455
<u>33</u>	Total		<u>2,587</u>

*See Appendix 13.

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APPENDIX 2

SOVIET JOURNALS PRODUCING TEN OR MORE ABSTRACTS
IN 1941 AND NONE IN 1947 AND 1948

<u>Position</u>	<u>Journal No.**</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1941</u>
PART I. Publications of the Academy of Sciences and Others Primarily Covering Theoretical Chemical Research			
1	141*	Transactions of State University of Uzbek, Collection of Chemical Work	45
2	224a*	Scientific Reports of Saratov University, N.G. Chernyshov	16
3	214	University of Kiev, Scientific Memoires, Chemical Bulletin	<u>11</u>
		Subtotal	<u>72</u>
PART II. Organs of the Ministries, Applied Research, and Technology of an Industry			
1	31	Distilling Industries	164
2	46	Journal of Chemical Industry (USSR)	75
3	1	The Organic Chemical Industry (USSR)	73
4	176	Bulletin of Exchange of Experience in the Colored Lacquers Industry	70
5	13	Theory and Practice of Metallurgy	69
6	18	Leather and Shoe Industry	62
7	8	Water Supply and Sanitary Technology	58
8	23	Movie Chemicals Industry	54
9	206	Plant Protection USSR (changed in 1939 to No. 178)	48
10	11*	Industrial Building Materials	44
11	33	Wood Chemistry Industry	36
12	222	Ceramics Magazine	35
13	15	Foundry Litoine Delo	33
14	248	Central Scientific Research Institute of the Leather Industry, Collection of Papers	31
15	259	Oils and Fats Industry	29
16	14	Ural Metallurgy	25
17	221	Transactions Scientific Institute Fertilizers, Insectofungicides	25
18	231	Transactions Institute of Chemical Technology, Ivanovo (USSR)	25
19	275	Transactions of the Voronezh Chemical Technology Institute	24
20	41	Chemization of Socialistic Agriculture (USSR)	23
21	197	Caoutchouc and Rubber (USSR)	23
22	63*	Transactions Kirov Institute Chemical Technology in Kazan	21
23	34*	Technical News	20
24	62	Coke and Chemistry	20
25	82	Oil and Fat Industries	20
26	4	Reports of the Metal Industries	19
27	44*	Optical Mechanics Industry	19
28	255	Horticulture	19

APPENDIX 2 (Continued)

Position	Journal No.**	Name of Journal	Number of Abstracts in 1941
29	246	Soviet Plant Industry Record	17
30	38*	Proceedings of the Stalin Steel Institute in Moscow	15
31	10	Metallurgist	15
32	32	Polygraph Industry	15
33	45	Chemical Apparatus Construction	15
34	21	Silk	14
35	98	Cellulose Industry	13
36	90	Canning Industry	12
37	152	All-Union Scientific Investigation Institute in Memory of A. I. Mikoyana, for Tobacco and Inferior Qualities of Tobacco, Krasnodar	12
38	215	Reports of the Novocherkasak Industrial Institute imeni S. Ordzhonikidze	12
39	16*	Aviation Industry	10
40	188	Vegetable Culture	10
41	258	Central Scientific Research Institute of the Paper Industry, Materials	10
42	268	All-State Scientific Research Institute for Cement, Labor Department	10
Subtotal			<u>1,344</u>

PART III. Medicine, Biochemistry, Biology, Pharmacology,
Toxicology, and Physiology

1	230	Biochemical Education (Plant)	80
2	42	Problems of Nutrition	43
3	83	Archives of Biological Science	35
4	210	Problems in Endocrinology (USSR)	27
5	5*	Experimental Medicine	21
6	199*	Pharmacy Journal	19
7	181	Acta Medica URSS	18
8	177*	Journal of Medicine (Ukraine)	17
9	237	Archives of Therapy (USSR)	16
10	224*	Scientific Reports of Saratov University, Section on Biology	15
11	225*	Journal of Microbiology, Academy of Sciences, URSR	15
12	182	Biology Journal	<u>11</u>
Subtotal			<u>317</u>

PART IV. Physics, Geology, and Other Related Sciences

1	6	Laboratory Practice	106
2	179*	Journal of Geology, Academy of Sciences, Ukraine, SSR	40
3	54*	Soviet Geology	32

APPENDIX 2 (Continued)

<u>Position</u>	<u>Journal No.**</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1941</u>
4	203	Problems of Animal Husbandry (USSR)	26
5	79f	Bulletin of Academy of Sciences URSS, Geology	17
6	233	Transactions of Arkhangel Algae Scientific Research Institute, Algae Eriophorum (Salt Water)	11
7	47	Proceedings Soil Institute V. V. Dokuchaeva, Academy of Sciences, SSSR	<u>10</u>
—		Subtotal	<u>242</u>
<u>64</u>		Total	<u>1,975</u>

*Journals known to be published in 1946 according to official Russian sources. These fifteen journals gave abstracts in the various categories as follows:

Part I	61
Part II	129
Part III	87
Part IV	<u>72</u>
Total	<u>349</u>

**See Appendix 13.

APPENDIX 3

SOVIET JOURNALS PRODUCING TEN OR MORE ABSTRACTS IN 1947 AND
1948 AND ABSTRACTED IN 1941

<u>Position</u>	<u>Journal No.**</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1947 and 1948*</u>
PART 1. Publications of the Academy of Sciences and Others Primarily Covering Theoretical Chemical Research			
1	65	Journal of General Chemistry (USSR)	295
2	78	Reports of the Academy of Sciences SSSR	278
3	69	Journal of Physical Chemistry (USSR)	174
4	68	Journal of Applied Chemistry (USSR)	132
5	79b	Bulletin of the Academy of Sciences URSS Section on Chemical Science	127
6	79e	Bulletin of the Academy of Sciences URSS Section on Science Technology	66
7	67	Acta Physicochimica URSS	63
8	39	Colloid Journal	60
9	40	Reports of the Institute of Chemistry, Ukrainian Academy of Science	50
Subtotal			1245
PART II. Organs of the Ministries, Applied Research, and Technology of an Industry			
1	66	Industrial Laboratory	110
2	17	Non-ferrous Metals	80
3	22	Petroleum Industry	52
4	71	Steel	38
5	36	Advances in Chemistry	24
6	9	Paper Industry	22
7	74	Fireproof (or Refractory) Materials	22
8	51	Engineers' and Technicians' Review	10
9	48	Autogenous Industry	10
10	61	Light Industry	10
Subtotal			378
PART III. Medicine, Biochemistry, Biology, Pharmacology, Toxicology, and Physiology			
1	43	Bulletin of Experimental Biological Medicine (USSR)	118
2	27	Biochemistry	62
3	117	Biochemical Journal (Ukraine)	50
4	76	Pharmacology and Toxicology	50
5	103	Pharmacy	42
6	12	Microbiology (USSR)	40
7	99	Journal of Physiology USSR	19
8	30	Clinical Medicine	18
9	113	Medical Parasitology & Parasitic Diseases (USSR)	18

APPENDIX 3 (Continued)

<u>Position</u>	<u>Journal No.**</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1947 and 1948*</u>
10	79c	Bulletin of the Academy of Sciences URSS Section on Biology	13
11	73	Journal of Microbiology, Epidemiology, and Immunobiology	<u>11</u>
		Subtotal	<u>441</u>
PART IV. Physics, Geology, and Other Related Sciences			
1	55	Pedology (USSR)	49
2	72	Journal of Experimental and Theoretical Physics (USSR)	47
3	79a	Bulletin of the Academy of Sciences URSS Physics Section	44
4	77	Journal of Technical Physics (USSR)	35
5	107	Reports of the Soviet Mineralogical Society	10
6	167	Proceedings of the Leningrad Academy of Agricultural Science	<u>10</u>
		Subtotal	<u>195</u>
<u>36</u>		TOTAL	<u>2259</u>

*In some instances the number of abstracts shown is not that actually counted in either 1947 or 1948. Instead, it is a number estimated to be representative of a year's volume of the specific journal. The estimates are based upon a critical inspection of the relation of the abstracts actually found to the pages and probable number of issues for the year.

**See Appendix 13.

APPENDIX 4

SOVIET JOURNALS PRODUCING TEN OR MORE ABSTRACTS IN EITHER 1947
OR 1948 AND WHICH WERE NOT ABSTRACTED IN 1941

<u>Position</u>	<u>Journal No.**</u>	<u>Name of Journal</u>	<u>Number of Abstracts in 1947 and 1948*</u>
PART I. Publications of the Academy of Sciences and Others Primarily Covering Theoretical Chemical Research			
1	277	Reports of Moscow University	25
2	108	Journal of Analytical Chemistry	16
3	150	Reports of Academy of Sciences, SSSR	<u>14</u>
Subtotal			<u>55</u>
PART II. Organs of the Ministries, Applied Research, and Technology of an Industry			
1	144	Chemical Industry	60
2	158	Meat and Milk Industries	30
3	169	Glass and Ceramics Industry	25
4	110	Sugar Industry	20
5	124	Hygiene and Sanitation	19
6	146	Transactions of All-Union Scientific Investigation Institute in memory of K. K. Gedroitsa for Fertilizers, Farming Techniques and Farm Soils.	18
7	139	Electrical Power Station	12
8	136	Coal	12
9	109	Reports of the All-Russian Thermotechnology Institute	12
10	134	Textile Industry	<u>10</u>
Subtotal			<u>218</u>
PART III. Medicine, Biochemistry, Biology, Pharmacology, Toxicology, and Physiology			
1	295	All-Union Council Plant Physiology	11
2	129	Pediatrics (USSR)	<u>10</u>
Subtotal			<u>21</u>
PART IV. Physics, Geology, and Other Related Sciences			
1	286	Vitamin Research News (USSR)	30
2	135	Soviet Agronomy	<u>12</u>
Subtotal			<u>42</u>
<u>17</u>	Total		<u>336</u>

*In some instances the number of abstracts shown is not that actually counted in either 1947 or 1948. Instead, it is a number estimated to be representative of a year's volume of the specific journal. The estimates are based upon a critical inspection of the relation of the abstracts actually found to the pages and probable number of issues for the year.

**See Appendix 13.

APPENDIX 5

SOVIET JOURNALS KNOWN TO HAVE BEEN PUBLISHED IN 1946
BUT NOT ABSTRACTED IN EITHER 1947 OR 1948

PositionName of JournalPART I. Publications of the Academy of Sciences and Others Primarily
covering Theoretical Chemical Research

- 1 Academy of Sciences, Ukraine SSR, Collection of Papers of I. V. Stalin
- 2 Herald of the Moscow University
- 3 Science Bulletin, Leningrad State University
- 4 Scientific Memoires of the Moscow Order of Lenin State University
- 5 *Scientific Reports of Saratov University in Chernyshev, Magazine of
Scientific Work by Students
- 6 Transactions of the Energy Institute, imeni Esman Azerbaijan Academy of
Science
- 7 Transactions of the Ivanovski Chemical Technical Higher School
- 8 Transactions of the Middle-Asiatic State University
- 9 *Transactions of State University of Uzbek, Collection of Chemical Work
- 10 Transactions of the V. V. Kuibyshev University Tomsk
- 11 Transactions of the Voronezh State University

PART II. Organs of the Ministries, Applied Research, and Technology of an
Industry

- 1 Air Forces Techniques
- 2 *Aviation Industry
- 3 Bulletin of Pacific Scientific Fishery Research Station
- 4 Central Scientific Research Institute of the Leather Industry, Work Reports
- 5 Central Scientific Research Institute of the Paper Industry, Materials
- 6 Communications Herald
- 7 Economic Journal of the Metal Trades
- 8 Engineering Magazine
- 9 GIPRO-Cement, State All-Union Institute of Enterprises and Scientific
Research Works
- 10 *Industrial Building Materials
- 11 Machine Builders
- 12 *Optical Mechanics Industry
- 13 *Proceedings of the Stalin Steel Institute in Moscow
- 14 Railroad Techniques
- 15 Reports of the Electrotechnical Institute
- 16 *Technical News
- 17 Textile Industry
- 18 Transactions of the All-Union Scientific Research Institute of the Food
Industry
- 19 Transactions of the Azerbaidzhan Petroleum Institute
- 20 Transactions of the Central Scientific Research Institute of the Sugar
Industry
- 21 Transactions of Industrial and Group Laboratory, Sugar Factories
- 22 *Transactions Kirov Institute Chemical Technology in Kazan
- 23 Transactions of the Scientific Research Institute of the Gypsum Industries
- 24 Transactions of Ural Industrial Institute in Kirov

PositionName of Journal

PART III. Medicine, Biochemistry, Biology, Pharmacology, Toxicology, and Physiology

- 1 Central Reference Medical Journal
- 2 *Experimental Medicine
- 3 Herald of the Academy of Medical Sciences, SSR
- 4 Herald of Roentgenology and Radiology
- 5 Herald of Surgery in Grekov
- 6 Hospital Nurses
- 7 Journal of General Biology
- 8 *Journal of Medicine
- 9 *Journal of Microbiology
- 10 Medical Profession
- 11 *Pharmacy Journal
- 12 Pharmacy and Pharmacology
- 13 Problems of Neuro-Surgery
- 14 Records of All-Union Council Plant Physiology
- 15 Reports of Pediatrics, Mother and Child Hygiene
- 16 *Scientific Reports of Saratov University, Section on Biology
- 17 Soviet Medical Journal
- 18 Soviet Medicine
- 19 Soviet Public Health Series
- 20 Transactions of the All-Union Experimental Medicine
- 21 Transactions of the Biological Scientific Research Institute of the Molotov State University imeni M. Gorki
- 22 Transactions of the Institute of Plant Physiology in Timiryazev
- 23 Zoology Journal

PART IV. Physics, Geology, and Other Related Sciences

- 1 Academy of Architecture, USSR
- 2 Air Defense Herald
- 3 Archangel Forestry Institute: Collection of Scientific Research Works
- 4 Civil Aviation
- 5 Collective Farm Production
- 6 *Journal of Geology, Academy of Sciences, Ukraine, SSR, Geological Institute
- 7 Journal of Geophysics
- 8 Oxygen
- 9 Pediatrics
- 10 Scientific Technical Herald
- 11 *Soviet Geology
- 12 Transactions of the Academy of Sciences, SSR, Physics Institute
- 13 Transactions of the Far Eastern Geological Prospecting Trust
- 14 Transactions of the Lenin Society of Naturalists
- 15 Transactions of the Leningrad State Optical Institute
- 16 Transactions of Moscow Geological, Hydrological, and Geodetical Trust
- 17 Transactions of the State Radium Institute

75

* Fifteen of the journals in the above list gave more than ten abstracts per journal in 1941. These, which are indicated by an asterisk, gave 354 abstracts in 1941 (24 abstracts per journal). There were 28 additional journals giving less than ten abstracts per journal which are not included in the list. There is no information available as to how many abstracts might be expected to be derived from any of the other journals. The ratio of journals giving more than ten abstracts to those giving less than ten abstracts in 1941 was approximately one to three. If the same ratio pertains to those that have started publication since 1941, there would be 21 in these, or a total of 36 for the entire list.

APPENDIX 6

TIME INTERVAL BETWEEN COVER DATE AND PUBLISHER'S DATE FOR
CHEMISCHES ZENTRALBLATT (U. S. ZONE)

Issue No.	Cover Date	Publisher's Date	Interval (Months)
1947 -- Vol. No. 1			
1/2	8/15 January 1947	12 March 1947	2
3/4	22/29 January	12 April	2 3/4
5/6	5/12 February	12 May	3
7/8	19/26 February	12 June	3 3/4
9/10	5/12 March	26 June	3 1/2
11/12	19/26 March	10 July	3 1/2
13/14	2/9 April	24 July	3 1/2
15/16	16/23 April	7 August	3 1/2
17/18	30/7 April-May	3 September	4
19/20	14/21 May	17 September	4
21/22	28/4 May-June	17 September	3 1/3
23/24	11/18 June	22 October	4
25/26	25/2 June-July	12 November	4 1/3
1947 -- Vol. No. 2			
1/2	9/16 July 1947	10 December 1947	5
3/4	23/30 July	7 January 1948	5
5/6	6/13 August	21 January	5
7/8	20/27 August	4 February	5
9/10	3/10 September	18 February	5
11/12	17/24 September	3 March	5
13/14	Not available at time of survey		
15/16	15/22 October	31 March	5
17/18	29/5 October-November	14 April	5
19/20	12/19 November	12 May	6
21/22	26/3 November-December	2 June	6
23/24	10/17 December	21 June	6
25/26	Not available at time of survey		
1948 -- Vol. No. 1			
1/2	7/14 January 1948	21 July 1948	6
3/4	21/28 January	28 July	6
5/6	4/11 February	11 August	6
7/8	18/25 February	25 August	6
9/10	3/10 March	8 September	6
11/12	17/24 March	22 September	6

Issue Nos. 1-34, 1947, of *Chemisches Zentralblatt*, Russian Edition, were received by the Library of Congress in October 1948. No publisher's date is given. The cover date for issue number 1/2 is 2/9 April 1947 and for the last issue, number 33/34, 3 December 1947.

APPENDIX 7

CHEMICAL PATENTS APPEARING IN EACH ISSUE OF
THE SOVIET BULLETIN OF INVENTIONS AS MEASURED
BY ABSTRACTS IN CHEMICAL ABSTRACTS

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
January	44	24	29	35				29	11	
February	30	12	27	40				36	63	51
March	42	4	40	27				(45	20
April	27	30	26	56				(54	26	37
May	25	24	29					30	72	19
June	25	17	39						26	
July	49	25	31					24	45	
August	34	32	26					68	53	
September	30	19	45						33	
October	26	52	37						33	
November	15	44	37						(
December	13	34	26						(76	
Total per year	360	317	392	158				241	483	127
Average per month	30	26	33	39				20	40	32

Blank spaces for the years 1941-1944 indicate that these issues were not received in the US and probably were not published in USSR. For the years 1945-1947, combined issues are indicated by brackets. Blank spaces for these years, where not explainable by a combined issue in the following month, mean that no Soviet chemical patent abstracts from these issues have yet appeared in *Chemical Abstracts*. Since the time lag for this journal to be reported by *Chemical Abstracts* varies from one to five years, it is still possible that chemical patents will be reported from these issues.

APPENDIX 8

APPENDIX B
ABSTRACTS PUBLISHED IN CHEMICAL ABSTRACTS
(Percentages)

Countries	1909	1913	1917	1918	1923	1929	1939	1940	1943 ^a	1947	1948 ^e
United States	20.1	20.7	43.9	45.4	32.1	25.8	27.7	33.5	30.6	41.8	
British Empire ^b	13.4	14.4	14.9	16.8	15.4	13.5	14.1	14.6	13.2	13.6	
France	13.2	13.0	7.6	9.2	11.3	7.0	9.1	5.3	4.9	8.4	
Russia	1.2	2.5	2.5	0.7	1.2	3.4	11.1	14.1	12.8	8.2	6.4
Germany	45.0	34.4	19.7	13.8	27.0	26.9	18.7	13.4	23.6	3.1	
Japan	0.3	0.4	1.6	2.8	2.2	3.7	4.4	5.0	0.5	4.4	
Italy	1.2	4.7	2.9	3.1	2.7	3.0	3.0	3.4	2.6	3.8	
Netherlands		1.7	2.6	3.6	2.2	2.1	1.6	1.3		1.7	
Switzerland		1.2	1.1	1.4	1.1	1.1	0.9	1.0		2.8	
Sweden		0.6	0.6	0.4	0.7	1.3	0.8	0.8		2.0	
Austria		2.8	1.1	1.0	0.8	1.7	0.4	0.2		0.2	
India ^c										2.0	
All Others ^d	5.6	2.6	1.5	1.8	3.3	10.5	8.2	7.4	11.8	10.0	

a. Percentages based on sampling only. For all other years complete counts of abstracts were made. No separate counts were made in 1943 for Austria, Netherlands, Sweden, and Switzerland. For these same countries no data are available for 1909 either.

b. Aside from England the strong contributors of the British Empire have been, in order, India (now outside the Empire), Canada, Australia, Union of South Africa, New Zealand, and Scotland. Of the 4,077 British papers abstracted in 1947, 3,187 came from England, 427 came from Canada, 294 from Australia, 58 from Union of South Africa, 49 from New Zealand, and 43 from Scotland. There were 808 abstracts from Indian papers in 1947.

c. Formerly classed with British Empire.

d. The figures for "all others", somewhat irregular because more countries (those mentioned in a above) are included for 1909 and 1943, show that chemical research activity, almost monopolized in the earlier years by the countries listed in the table, has become more world-wide. In the years after World War I scientific research activity strengthened notably in such European countries as Poland and Czechoslovakia, and the growing and spreading have been steady if slow in many smaller nations not directly affected by war. The peak seems to have been reached in prosperous 1929.

e. Total number of journal abstracts for 1948 was 35,867 of which 2,308 were of Russian origin, information is not available at this time for other countries.

APPENDIX 9

NUMBER OF SOVIET JOURNAL AND PATENT ABSTRACTS APPEARING IN
CHEMICAL ABSTRACTS EACH MONTH DURING 1946, 1947, AND 1948

Month	Years		
	1946	1947	1948
January	394 (394)	217 (213)	152 (152)
February	273 (273)	120 (120)	144 (144)
March	622 (505)	340 (196)	151 (151)
April	512 (509)	340 (276)	201 (201)
May	618 (513)	330 (326)	197 (197)
June	624 (624)	193 (191)	174 (174)
July	370 (354)	195 (168)	295 (238)
August	473 (473)	207 (135)	204 (202)
September	437 (408)	220 (213)	251 (251)
October	356 (355)	230 (230)	314 (280)
November	527 (527)	390 (368)	320 (318)
Totals	5206 (4935)	2782 (2436)	2403 (2308)
Percentage of 1946 total	100 (100)	53 (49)	46 (47)

The figures in parentheses are for journal abstracts while the others are for both journal and patent abstracts.

The December issues of *Chemical Abstracts* are composed of various indexes to the Journal. No abstracts appear in the December issues.

APPENDIX 10

COMPARISONS OF TOTAL NUMBER OF SOVIET JOURNAL ABSTRACTS BY
CATEGORY APPEARING IN CHEMICAL ABSTRACTS
DURING 1948, 1947, AND 1941

Number of Category	1948 Total	1947 Total	1941 Total	1947 Percent of 1941	1948 Percent of 1941
1	38	47	96	49	40
2	403	437	564	77	72
3	140	125	247	51	57
4	50	77	139	55	36
5	9	18	66	27	14
6	32	26	72	36	44
7	110	111	266	42	41
8	49	63	139	45	35
9	105	214	372	58	28
10	408	231	349	66	117
11	444	472	816	58	54
12	29	22	103	21	28
13	5	9	96	9	5
14	15	30	125	24	12
15	91	69	274	25	33
15A	9	26	0	-	-
16	15	18	183	10	8
17	29	93	71	131	41
18	27	34	109	31	25
19	93	41	140	29	66
20	12	16	70	23	17
21	43	70	108	65	40
22	52	80	75	107	69
23	28	26	60	43	47
24	8	19	28	68	29
25	11	2	66	3	17
26	5	8	94	9	5
27	4	2	40	5	10
28	19	13	33	39	58
29	0	7	77	9	0
30	15	13	57	23	26
31	10	17	0	-	-
Totals	2,308	2,436	4,935	49%	47%

APPENDIX 11

NUMBER OF SOVIET CHEMICAL PATENTS APPEARING IN
CHEMICAL ABSTRACTS FOR YEARS 1935-1948

Year	Number of Patents	Averages for Selected Years
1935	192	Average for five prewar years - 436
1936	528)	
1937	263)	
1938	447)	
1939	498)	
1940	444)	Average during five war years - 187
1941	271)	
1942	147)	
1943	27)	
1944	316)	
1945	176)	Average for three postwar years - 235
1946	264)	
1947	346)	
1948	95)	
Total	4,014	
Average per year (1936-1948) - 294		

APPENDIX 12

PERIODICALS LISTED BY CHEMICAL ABSTRACTS

This table gives the sources of periodicals and the percentages of the total by countries for the two latest issues of *List of Periodicals Abstracted by Chemical Abstracts*.

Country	1946		1936	
	No.	%	No.	%
Argentina	77	1.8	30	1.1
Austria	13	0.3	33	1.2
Belgium	58	1.3	44	1.6
Brazil	96	2.2	21	0.7
British Empire	785	18.2	494	18.1
Bulgaria	6	0.1	3	...
Chile	16	0.4	3	...
China	66	1.5	54	1.9
Colombia	11	0.3	1	...
Cuba	13	0.3	3	...
Czechoslovakia	29	0.7	24	0.8
Denmark	41	0.9	24	0.8
Egypt	10	0.2	5	0.1
Federated Malay States	12	0.3	7	0.2
Finland	19	0.4	17	0.6
France	225	5.2	170	6.2
Germany	450	10.4	407	14.9
Hungary	7	0.2	26	0.9
International ^a	47	1.1	8	0.2
Italy	158	3.7	132	4.8
Japan	188	4.4	151	5.5
Mexico	27	0.6	6	0.2
Netherlands	78	1.8	32	1.1
Norway	28	0.6	18	0.6
Peru	18	0.4	3	...
Philippine Islands	13	0.3	8	0.2
Poland	32	0.7	28	1.2
Portugal	14	0.3	4	...
Rumania	26	0.6	16	0.5
Spain	37	0.9	23	0.8
Sweden	79	1.8	49	1.7
Switzerland	70	1.6	30	1.1
Turkey	9	0.2	1	...
USSR ^b	334	7.7	201	7.3
United States	1,175	27.2	607	22.2
Uruguay	18	0.4	3	...
Venezuela	8	0.2
Yugoslavia	7	0.2	4	...
All other countries	18	0.4
Total	4,318		2,690	

a International congress publications and the like.

b Of the total of 334 periodicals for the USSR, 5 are Estonian, 5 are Latvian, 1 is Lithuanian, and 19 are Ukrainian.

APPENDIX 13

KEY TO SOVIET JOURNALS

(x = five or more abstracts for that year; o = less than five; d = discontinued)

Abstracted by C. A. in Year			Code No.	Name of Journal
1941	1947	1948		
x	d-1941		1	The Organic Chemical Industry (USSR) Promyshlennost Organicheskoi Khimii (Merged with Journal of Chemical Industry, which was discontinued in 1941)
x		x	2	Physical Science Progress Uspekhi Fizicheskikh Nauk
o	x	x	3	Nature Priroda
x	d-1940		4	Reports of the Metal Industries Vestnik Metallopromyshlennosti (Merged with other journals in 1940 under new name, Tyazheloe Mashinostroenie, which was discontinued in 1941)
x			5	Experimental Medicine Eksperimentalna Meditsina Med. Exp.
x	d-1941		6	Laboratory Practice Laboratornaia Praktika Laboratoriumsprax
x			7	Precision Industry Technaia Industriia
x	d		8	Water Supply and Sanitary Technology Vodosnabzhenie i Sanitarnaya Tekhnika Wasserversorg. Sanit. Techn. (Temporarily suspended in 1941)
x	x	x	9	Paper Industry Bumazhnaya Promyshlennost
x	d-1941		10	Metallurgist Metallurg (Merged with Stal, No. 71, in 1941)
x			11	Industrial Building Materials Promyshlennost Stroitelnykh Materialov Ind. Baumater (Received regularly by FDB)
x	x	x	12	Microbiology (USSR) Mikrobiologiya

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x	d-1941		13	Theory and Practice of Metallurgy Teoriia i Praktika Metallurgii Theorie Prax Metallurg (Merged with Stal, No. 71, in 1941)
x			14	Ural Metallurgy Uralskaya Metallurgiya
x	d-1941		15	Foundry Liteinoe Delo Giesserei
x			16	Aviation Industry Aviapromyshlennost Luftfahrtind
x	x	x	17	Non-ferrous Metals Tavetnye Metally Nichteisenmetalle
x	d-1941		18	Leather and Shoe Industry Kozhevenno Obuvnaia Promyshlennost SSSR Leder u. Schuhwarendind, USSR (Merged with Legkaya Prom., No. 61, in 1941)
o	d-1941		19	India Rubber Kauchuk i Rezina Kautshek u. Gummi
o		o	20	Biochemical Journal Biokhemicnii Zhurnal (Ukrainskii Biokhim Zhurnal during 1937-1946)
x	d		21	Silk Shelk Seide (Merged with Zellwolle und Kunsteide, a German publication)
x	x	x	22	Petroleum Industry Nefyanoie Khozayaistvo
x	o		22A	Azerbaijani Petroleum Industry Azerbaidzhanskoe Neftyanoe Khozayaistvo
x			23	Movie Chemical Industry Kinofotokhim Promyshlennost Kinophotochem. Ind. (Kinofototekhnika, 1941, is apparently a continuation)
x			24	Proceedings Leningrad Industrial Institute Transactions of Leningrad M.I. Kalinin Polytechnic Inst. Trudy Leningradskogo Industriyogo Instituta, Razdel Fiziko-Matematicheskii Nauk Secteur Phys.-Math. (FDB has issue No. 1, 1946)

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
	x		25	Reports of the Section on Platinous Precious Metals Izvestiya Sektora Platinyi Drugikh Blagorodnykh Metallov Ann. Secteur Platine Metaux Proc.
o			26	Proceedings Leningrad Chemical Technical Red Banner Institute Trudy Leningradskogo Krasnoznamennogo Khimiko- Tekhnologicheskogo Instituta im. Leningradskogo Soveta Arb. Leningrader Chem-Technol. Rote-Fahne Inst. Leningrad Rates
x	x	x	27	Biochemistry Biokhimiya
o			28	Soviet Physicians Journal Sovietskii Vrachebnyi Zhurnal
x	x	x	29	Venerology and Dermatology News Vestnik Venerologii i Dermatologii
x	x	x	30	Clinical Medicine Klinicheskaya Meditsina (USSR)
x	d-1941		31	Distilling Industries Spirto-Vodochnaya Promyshlennost Brantwein Ind. (Merged with Pishchevaya Prom, No. 75, in 1941)
x	o		32	Polygraph Industry Poligraficheskoe Proizvodstvo Polygraph. Betrieb
x	d		33	Wood Chemistry Industry Lesokhimicheskaya Promyshlennost Holz Chem. Ind.
x			34	Technical News Novosti Tekhniki Neuheiten Techn.
o			35	Technology and Armament Tekhnika i Vooruzhenie Techn. u. Bewaffn. (May be the same as Teknika)
x	x	x	36	Advances in Chemistry Uspekhi Khimii Fortschr. Chem.
o		o	37	Reports of the Section on Physical Chemical Analysis izvestiya Sektora Fiziko-Khimicheskogo Analiza Ann Secteur Analyse Physico-Chim.

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x			38	Proceedings of the Stalin Steel Institute in Moscow Trudy Moskovskogo Instituta Stali Im. I.V. Stalina Arb. Moskauer Stalin-Inst. Stahl
x	x	o	39	Colloid Journal Kolloidnyi Zhurnal
x		x	40	Reports of the Institute of Chemistry, Ukrainian Academy of Science Zapiski Institutu Khimii, Akademiya Nauk URSR (Ukr.) Ber. Inst. Chem., Acad. Sci., Ukr. SSR
x	d-1941		41	Chemization of Socialistic Agriculture (USSR) Khimizatsiya Sotsialisticheskogo Zemledeliya
x	d-1941		42	Problems of Nutrition Voprosy Pitaniya
x	x	x	43	Bulletin of Experimental Biological Medicine (USSR) Byulleten Eksperimentalnoi Biologii i Meditsiny Bull. Biol. Med. Exp. URSS
x			44	Optical Mechanics Industry Optiko-Mekhanicheskaya Promyshlennost
x	d-1941		45	Chemical Apparatus Construction Khimicheskoe Mashinostroenie Chem. Apparatebau
x	d-1941		46	Journal of Chemical Industry (USSR) Zhurnal Khimicheskoi Promyshlennosti Z. Chem. Ind.
x			47	Proceedings Soil Institute V. V. Dokuchaeva, Academy of Sciences SSSR Akademiya Nauk SSSR, Trudy Pochvennogo Instituta im V. V. Dokuchaeva
x	x	o	48	Autogenous Industry Avtogennoe Delo Avtogene Ind.
			49	Bast Fiber Industry Promyshlennosty Lubyanykh Volokon Bastfaser Ind.
o			50	Wool Industry Sherstyanoie Delo Woll Ind.
x	x		51	Engineers' and Technicians' Review Vestnik Inzhenerov i Tekhnikov Anz. Ing. Techniker

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x	d-1940		52	Sugar Sakhar Zucker (Merged with Pishchevaya Prom., No. 75, in 1941)
o	x	x	53	Mineral Resources Survey Rezvedka Nedr-lager Lagerstattenforsch
x			54	Soviet Geology Sovetskaya Geologiya (FDB has June 1948 issue)
x	x	x	55	Pedology (USSR) (Soil Science) Pochvovedenie
	x	o	56	Mining Journal Gornyi Zhurnal Berg-J.
x			57	Soviet Subtropics Sovetskie Subtropiki
			58	German Technology Germanskaya Tekhnika Z. dtsh. Techn.
			59	Transactions Leningrad Industrial Institute, Section on Metallurgical Engineering Trudy Leningradskogo Industrialnogo Instituta Razdel Metallurgii
o			60	Archives of the Ministry of Soil Information Arkhiv Ministarstva Poloprivrede Arch. Minist. Bodenkunde (Not a USSR publication)
x	x		61	Light Industry Legkaya Promyshlennost Leichtind.
x			62	Coke and Chemistry Koks i Khimiya Koks u. Chem.
x			63	Transactions Kirov Institute Chemical Technology im Kazan Trudy Kazanskogo Khimiko-Tekhnologicheskogo Insti- tuta im. Kirova
			64	Journal of Microbiology Mikrobiologichnii Zhurnal (Same as No. 225)

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x	x	x	65	Journal of General Chemistry (USSR) Zhurnal Obshchei Khimii J. Chim. Gen.
x	x	x	66	Industrial Laboratory Zavodskaya Laboratoriya Betriebs-Lab.
x	x	o	67	Acta Physicochimica URSS
x	x	x	68	Journal of Applied Chemistry (USSR) Zhurnal Prikladnoi Khimii J. Chim. Appl.
x	x	x	69	Journal of Physical Chemistry (USSR) Zhurnal Fizicheskoi Khimii J. Physik. Chem.
x	x	o	70	Journal of Physics (Moscow) (Academy of Sciences of USSR) (Continuation of Technical Physics of the USSR)
x	x	x	71	Steel Stal Stahl
x	x	x	72	Journal of Experimental and Theoretical Physics (USSR) Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki J. Exp. Theoret. Physik
x	x		73	Journal of Microbiology, Epidemiology, and Immunobiology Zhurnal Mikrobiologii, Epidemiologii, Immunologii J. Microbiol., Epidemiol., Immunobiol.
x	x	x	74	Fireproof (or Refractory) Materials Ogneupory Feuerfeste Mater
x		o	75	Food Industry Pishchevaya Promyshlennost
x	x	x	76	Pharmacology and Toxicology Farmakologiya i Toksikologiya
x	x	x	77	Journal of Technical Physics (USSR) Zhurnal Tekhnicheskoi Fiziki
x	x	x	78	Reports of the Academy of Sciences SSSR C. R. (Doklady) Acad. Sci., URSS

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x		x	79a	Bulletin of the Academy of Sciences URSS, Physics Section Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya Bull. Acad. Sci., URSS, Ser. Physique
x	o	x	79b	Section on Chemical Science Otdelenie Khimicheskikh Nauk Cl. Sci. Chim.
x		x	79c	Section on Biology
	o		79d	Section on Geography and Geophysics
x	x	x	79e	Section on Science Technology Otdelenie Tekhnicheskikh
x		x	79f	Geology
		x	79g	Meteoritika
	d-1940		80	Milk Industry Molochnaya Promyshlennost (Merged with Myasnaya Industriya, No. 153, in 1941)
x	d-1939		81	Milk and Butter Industry Molochno-Maslodelnaya Promyshlennost (Continued as No. 80 above)
x	d-1940		82	Oil and Fat Industries Masloboino-Zhirovoe Delo (Merged with Pishcheyaya Prom., No. 75, in 1941)
x	d-1941		83	Archives of Biological Science Arkhiv Biologicheskikh Nauk
	d-1930		84	Annals White Russian Agricultural Institute Zapiski Belrusskoi Dzyarzhavnai Akademii Selskoi Gospadarki imya Kastrychnikavai Revalyutzyi
x	o		85	Reports of the Electroindustry Vestnik Elektropromyshlennosti Nachr. Elektroind.
o			86	Flax and Hemp Len i Konoplya Flachs und Hauf
	o		87	Chemistry and Industry Khimiya i Industriya Chem. u. Ind.

APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
	o	o	88	Road Building Stroitelstvo Dorog Strassenbau
	d-1931		89	Transactions of the State Ceramic Research Institute (USSR) Trudy Gosudarstvennogo Issledovatel'skogo Keramicheskogo Instituta
x	d-1940		90	Canning Industry Konservnaya i Plodoovoshchnaya Promyshlennost Konserven-, Obst- u. Gemuseind. (Merged with Pischevaya Prom., No. 75)
x	o	o	91	Astronomical Journal of the Soviet Union Astronomicheskii Zhurnal
x			92	Kazan Medical Journal Kazanskii Meditsinskii Zhurnal
			93	Scientific Research Institute of Plastic Materials, People's Commissar for Heavy Industry, Collected Treatises Nauchno-Issledovatel'skii Institut Plasticheskikh Mass, Sbornik Statei
o		o	94	Urology Urologiya Urologie
			95	Soviet Physicians Journal Sovetskii Vrachebnyi Zhurnal Sowjetruss, Arztl. Z. (Same as No. 28)
o	o	o	96	Advances in Modern Biology (USSR) Uspekhi Sovremennoi Biologii
			97	Reports of the Electrotechnical Institute Trudy Vsesoyznogo Elektrotekhnicheskogo Instituta Arb. Elektrotechn. Inst.
x	d-1940		98	Cellulose Industry Khlopchatobumazhnaya Promyshlennost Baumwoll, Ind. (Combined with other journals in Tekstilnaya Prom., No. 134, in 1941)
x	x	x	99	Journal of Physiology USSR Fiziologicheskii Zhurnal SSSR

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o		o	100	Refrigeration Industry Kholodilnaya Promyshlennost Kälte Ind.
o	d-1941		101	Tobacco Tabak SSSR (Merged with Pishchevaya Prom., No. 75, in 1941)
			102	Air Protection Notes Vestnik Protivovozdushnoi Oborony Luftschutz-Mitt
x	x	x	103	Pharmacy Farmatsiya Pharmazie
			104	State Scientific Research and Project Institute for Ceramics Gosudarstvennyi Nauchno-Issledovatel'skii i Proektnyi Keramicheskii Institut Staatl. Wiss. Forsch.-u Projekt. - Inst. Keram. (Same as No. 89?)
x			105	Annals of the White Russian Agricultural Institute Trudy Belorusskogo Selskokhozyaistvennogo Instituta
			106	Reports of the Academy of Sciences URSS Doklady Akademii Nauk SSSR (Same as No. 78)
x	x	x	107	Reports of the Soviet Mineralogical Society Zapiski Vserossiiskogo Mineralogicheskogo Obshchestva Mem. Soc. Russe Mineral.
	x	x	108	Journal of Analytical Chemistry Zhurnal Analiticheskoi Khimii
	x	o	109	Reports of the All-Russian Thermotechnology Institute Izvestiya Vsesoyuznogo Teplotekhnicheskogo Instituta Ber. Allruss. Warmetachn. Inst.
	x	x	110	Sugar Industry Sakharnaya Promyshlennost Zucker-Ind.
o	o	o	111	Journal of Botany USSR Botanicheskii Zhurnal SSSR
o	x		112	Turf Industry (or Peat) Torfyanaya Promyshlennost Torf-Ind.

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o	x	o	113	Medical Parasitology & Parasitic Diseases (USSR) Meditsinskaya Parazitologiya i Parazitarnye Bolezni
	o		114	Surgery Khirurgiya
	o		115	Proceedings of Academy of Sciences, Armenian SSSR Doklady Akademii Nauk Armyanskoi SSR
	o		116	Minute of Joint High Molecular Conference Academy of Sciences SSSR, Dept. Chem. Sci., and Dept. Phys. & Math. Trudy Konferentsii Vysokomolekulyarnym, Soedineniyam; Akademii Nauk SSSR, Otdelenie. Khim., Nauk i Otdel. Fiz-Mat. Nauk
x	x		117	Biochemical Journal (Ukraine) Biokhimichnii Zhurnal (Kiev, Ukr. SSR) (Same as No. 20 except during 1937-46)
			118	Scientific-Technical Conference of Leningrad Polytechnic Institute, 2nd Mtg. Nauchno-Tekhnicheskaya Konferentsiya Leningrad Politekh. Inst., 2nd
	o		119	Scientific Records of Kazan State University Uchenye Zapiski Kazanskogo Gosudarstvennogo Universiteta
		o	120	Soviet Boiler Turbine Construction Sovietskili Kotloturbostronoenie
	x		121	Conference on Viscosity of Liquids and Colloid Solutions Akad. Nauk SSSR, Otdel. Tekh. Nauk. Inst. Mashinovedeniya, Soveshchanie, Vyazkosti Zhdkostei i Kolloid, Rastvarov
	x		122	Fuel Saving Journal Zapiski Ekonomiya Topliva
	o		123	Machine Tools and Instruments Stanki i Instrument
	x	x	124	Hygiene and Sanitation Gigiena i Sanitariya
		x	125	Veterinary Medicine Veterinariya (Same as No. 220)

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
	x		126	American Review Soviet Medicine (Published by American Soviet Medical Society, New York)
o	o	o	127	Soviet Botany Sovetskii Botanicheskii
	o	o	128	The Surgeon's Assistant and Midwife Feldsher i Akusherka
		x	129	Pediatrics (USSR) Pediatriya
		x	130	The Medical Profession Vrachebnoe Delo
	o	x	131	Ophthalmology News Vestnik Oftalmologii
	o	o	132	Power Industry Promyshlennaya Energetika
	o	x	133	Naval Medical Journal Voenno-Meditsinskii Zhurnal
		x	134	Textile Industry Tekstilnaya Promyshlennost
	x	o	135	Soviet Agronomy Sovetskaya Agronomiya
	o		136	Coal Ugol
o	o		137	Electricity Elektrichestvo
o	o	o	138	Bulletin of the Society of Naturalists, Moscow, Section on Geology Byulleten Moskovskogo Obshchestva Ispytatelei Prirody, Otdel Geologicheskii
			138A	Bulletin of the Society of Naturalists, Moscow, Section on Biology
	o		139	Electrical Power Station Elektricheskie Stantsii
	o		140	Hospital News Gospitalnoe Delo

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
	x	x	169	Glass and Ceramics Industry Stekalnaya i Keramicheskaya Promyshlennost (May be continuation of No. 243)
	o	o	170	Neuropathology and Psychiatry Nevropatologiya i Psikhiatriya
o	x	o	171	Scientific Records of Leningrad State University, Section on Physical Sciences Uchenye Zapiski Leningrad Gosudarst. Univ., Ser. Fiz. Nauk
	x		172	Trudy Kafedry Biokhim. Moskov, Zootekh. Inst. Konevodstva
	o	o	173	Energetics Bulletin Energeticheskii Byulleten
	o		174	Radio Technics Radiotekhnika
	o		175	Agricultural Biology Agrobiologiya (continuation of Yarovizatsiya)
x			176	Bulletin of Exchange of Experience in the Colored Lacquers Industry Byulleten Obmena Opytom Lakokrasochnoi Promyshlennosti
x			177	Journal of Medicine (Ukraine) Medichnii Zhurnal (Ukraine)
o			178	Bulletin Plant Protection (Leningrad) Vestnik Zashchity Rastenii
x			179	Journal of Geology, Academy of Sciences, Ukraine SSR Geologichnii Zhurnal, Ukrainska Akademiya Nauk, Institut Geologii
o			180	Scientific Records of Kharkov Mechanical Engineering Institute Nauch. Zapiski Kharkov. Mekh.-Mash. Inst.
x	d-1940		181	Acta Medica URSS
x		o	182	Biology Journal Biologicheskii Zhurnal (Formerly Zhurnal Eksperimentalnoi Biologii)
o			183	Reports of the Eastern Siberian Rural Economy Institute Izvestia Vostochno-Sibirsk, Selsko-Khoz. Inst.

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
			184	Information for the Fermentation Industry Konsult. Brodilnoi Prom.
o			185	Flour Mill and Grain Warehouse Economy Mukomolnoi i Elevatorno-Skladochnoe Khoz.
o			186	Reports on Perennial Crops Zapiski Ustoichiviyi Urozhai
x		o	187	Transactions of All-Union Academy of Rural Economy Scientific Research Laboratory Doklady Vsesoyuznoi Akademii Selsko- Khozyarstvennykh Nauch. Issledovatel. Lab.
x	d-1940		188	Vegetable Culture Ovoshchevodstvo (Merged with Sadovodstvo in 1941 to form Sady i Ogorody which was discontinued in 1941)
o			189	Soviet Cotton Sovetskaya Khlopok
o			190	Bird Breeding Sovet Ptitsevodstvo
x	d-1940		191	Glass Industry Stekalnaya Promyshlennost (Merged with Legkaya Prom., No. 61, in 1941)
x		o	192	Cement Tsement
o			193	Construction Experience Opyt Stroiki
o			194	Soviet Subway Sovet Metro
o			195	Forest Products Technical Academy Trudy Lesotekhnicheskoi Akademii im. S. M. Kirova Mitteilungen der Kirov Forsttechnischen Akademie
o			196	Bulletin V.U.G.I., Chemical Laboratory Byull. V.U.G.I., Khim. Lab.
x	d-1941		197	Caoutchouc and Rubber (USSR) Kauchuk i Rezina (Formerly Zhurnal Razinovoi Promyshlennosti)
o			198	Heating and Ventilating Otoplenie i Ventilyatsiya

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x			199	Pharmacy Journal Farmatsevtichnii Zhurnal
o	d-1941		200	Gold Industry Zolotaya Prom.
o			201	Information for Confectioners Konsult. Konditera
o	d-1940		202	Meat Industry Myasnaya Industriya SSSR (Merged with No. 158 in 1941)
x	d-1938		203	Problems of Animal Husbandry (USSR) Problemy Zhivotnovodstva apparently suspended in Dec. 1938
o			204	Labor Problems in Shoe Production Sbornik Trudov Voprosam Obuvnogo Proizvodstva
o			205	Reports of the Institute of Low-Field Electrical Phenomena Izvestiya Elektroprom. Slabogo Toka
x	d-1939		206	Plant Protection USSR (Changed in 1939 to No. 178)
o			207	Bulletin V.U.G.I., Geological Petrographical Laboratory Byull. V.U.G.I., etc.
o			208	Thermal Power Economy Teplo-Silovoe Khoz. (Same as No. 234)
o			209	All-Union Scientific Research Institute for Promotion of Safety in Work Vsesoyuz. Nauch. Issledovatel. Inst. Okhrany Truda
x	d-1941		210	Problems in Endocrinology (USSR) Problemy Endokrinologii (USSR)
o			211	Bulletin of the Institute of Genetics (USSR) Trudy Instituta Genetiki
o			212	Labor Reports of All-Union Scientific Research Institute for Metrology Vsesoyuz. Nauch. Issledovatel. Inst. Metrol, Sbornik Trudov

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o			212A	All-Union Scientific Research Institute for Metrology, Summaries of Surveys of Important Scientific Research work by Vniim Laboratory Vsesoyuz. Nauch. Issledovatel. Inst. Metrol, Kratkii Obzor Vazhneishikh Nauch. Issledovatel. Rabot Lab Vniim
x			213	Trudy Akad. Nauk SSSR, Azerbaidzhan, Filial J8, Ser. Fiz-Khim. (FDB has 1946 issue)
x			214	University Kiev, Scientific Memoires Chemical Bulletin Kiivakii Derzharnii Universitat im. T. G. Shchevchepka Nauk. Zapiski, Khim. Zbirnik
x			215	Reports of the Novocherkasek Industrial Institute imena S. Ordzhonikidze
o			216	Akad. Nauk Ukrain SSR, Sbornik Trudov. I. V. Stalini
x			217	State Institute of Applied Chemistry, Reports Gosudarst. Inst. Prikladnoi Khim., Sbornik Statei
x			218	Transactions All-Union Scientific Research Institute Econ. Mineralogy Trudy Vsesoyuznogo Nauchno-Issledovtelskogo Instituta Mineralnogo Syrya
x			219	Central Scientific Research Institute for Leather Industry Construction and Physically and Mechanically Reclaimed Rubber, Collagens and Cellulose Production, Reports of Work of Phys. Chem. Section TsNIKP Tsentral Nauch. Issledovatel. Inst. Kozhobuvnoi Prom., Stroenie i Fiz. - Mekhan. Sroistva Kauchuka, Kollagena i Proizvodnykh Tsellyulozy, Sbornik Rabot Fiz. - Khim. Otdela. TsNIKP (Same as No. 294)
o			220	Soviet Veterinary Medicine Sovet. Veterinariya (Same as No. 125)
x		x	221	Transactions Scientific Institute Fertilizers, Insectofungicides Trudy Nauehnogo Instituta po Udsbreniyami Insektofundisidam im. Ya. V. Samotiva
x	d-1941		222	Ceramics Magazine Keramicheskii Sbornik

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o			223	Academy of Sciences Ukraine SSR, Institute Electrical Welding
x			224	Scientific Reports of Saratov University, Section on Biology Uchenyo Zapiski Saratov Univ., Ser. Biol.
x			224A	Scientific Reports of Saratov University N. G. Chernyshev Magazine of Scientific Work by Students Uchenyo Zapiski Saratov Univ. N. G. Chernyshevskogo, Sbornik Nauchnykh Rabot Studentov
x			225	Journal of Microbiology, Academy of Sciences URSR Mikrobiol. Zhur., Akad. Nauk URSR (Same as No. 64) (There is no record of receipt of this journal by FDB but it is mentioned in a recent issue of Mikrobiologiya, No. 12)
o			226	Flax-Hemp-Jute Industries Lno-Penko-Dzhutovaya Prom. (Changed name in 1939 to Prom. Lubyanykh Volokon, No. 49)
x			227	Obmen Opytom, Gladkozhyaementel
x			228	Annals of Physics, Kiev Memoires de Physique, Kiev Institut Fiziki
x			229	Reports of the Pissarjewsky Institute of Physical Chemistry Academy of Sciences, Ukrainian SSR Ber. Pissarjewsky Inst. Physik. Chem., Akad. Wiss. Ukr. SSR
x			230	Biochemical Education (Plant) Biokhim. Kultur. Rastanii
x			231	Transactions of Institute of Chemical Technology Ivanovo (USSR) Trudy Ivanovskogo Khimiko - Teknologicheskogo Instituta
o			232	Pub. Technical University Estonian SSR Tallinn Tallina Tehnikaulikooli Toimetused Publikatsii Tallinskoi Tekhnicheskoi Vysshoi Shkoly (Estonskaya SSR)
x			233	Transactions Arkhangel. Algae Scientific Research Institute, Algae Eriophorum (Salt water) Trudy Arkhangel. Vodoroslevogo Nauch.-Issledovatel. Inst., Vodorosli Belogo Morya

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o			234	Thermal Economy Teplosilovoe Khoz. Warmewirtsch. (Same as No. 208)
o	d-1939		235	Chemistry of Solid Fuels Khim. Tverdogo Topliva
x			236	Communications from the Kirov Forest Technology Academy USSR Mitt. Kirov Forsttech. Akad. (USSR) Trudy Lesotskhnicheskoi Akademii im. S.M.
x			237	Archives of Therapy (USSR) Therap. Arch. (USSR)
o			238	Military Sanitation News Voenno-Sanitarnoe Delo
x	d-1938		239	Soviet Metallurgy Sovetskaya Metallurgiya
o			240	Annals of Roentgenology and Radiology (USSR) Annales Roentgenologie Radiologii (USSR) Vestnik Rentgenologii i Radiologii
x	d-1941		241	Transactions of the Central Scientific Research Institute of the Confectionery Industry Trudy Tsentral. Nauch. Issledovatel Inst., Konditerskoi Prom.
o	d		242	Herald of Standardization Vestnik Standartizatsii
o	d-1940		243	Ceramics and Glass Keramika i Stekls (Stekolnaya Prom. after 1938 which was discontinued in 1940, No. 169 may be a continuation)
o			244	All-Union State Institute of Designing Prodnriyatii and Scientific Research Division of the Cement Industry Giprotsement Gosudarst. Vsesoyuz. Inst. Proektirovaniya Prodnriyatii i Nauch. Issledovatel. Rabotam Tsement Prom. Giprotsement (Same as No. 269) (FDB has 1945 issue)
o			245	Autotractor News Avtotraktornoe Delo

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APPENDIX 13 (Continued)

Abstracted by C. A. in Year			Code No.	Name of Journal
1941	1947	1948		
x			246	Soviet Plant Industry Record Vestnik Sotsialisticheskogo Rastenievodstva
o			247	Medical Journal of Azerbaidzhan Azerbaidzhanskii Med. Zhur.
x			248	Central Scientific Research Institute of the Leather Industry, Labor Reports Tsentral Nauch. Issledovatel. Inst. Kozhevennoi Prom. Sbornik Rabot (Same as No. 219)
o			249	Reports Prats Prisvia of the Memorial Chemistry Academy V. M. Lyubimenka, Academy of Sciences URSR, Institute Botan., Kiev Abornik Prats Prisvia Chem. Pamyati Akad. V. M. Lyubimenka, Akad. Nauk. URSR Inst. Botan, Kiev
o			250	Journal of the Institute of Botany, Academy of Sciences. URSR Zhur. Inst. Botan., Akad. Nauk URSR
o			251	Selection and Seed Crops Selektsiya i Semenovodstvo (Issue No. 1. 1947, at Library of Congress)
o			252	Transactions of the Conferencé on Human Physiology, Saratov Trudy Konf. Posvoved. Fisiol. Saratov
x			253	C.R. Academy of Sciences URSS (Probably same as No. 78)
x			254	Scientific reports of the Sugar Industry, Agronomy Division Nauch. Zapiski Sakharnoi Prom., Agron. Byp.
x			255	Horticulture Sadovodstvo (Merged with Ovoshchesodstvo in 1941 under name Sady i Ogorody, which apparently was suspended in 1941)
o			256	Bulletin, Far Eastern Branch Academy of Sciences USSR Vestnik DalNovostochnogo Filiala Akademii Nauk SSSR
x			257	Transactions Scientific Research Institute of Physiology Trudy Instituta Fiziologii Narkomprosa SSSR Travaux de L'Institut de recherches Physiologiques de Moscow

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
x		o	258	Central Scientific Research Institute of the Paper Industry Materials Tsentral. Nauch.--Issledovatel. Inst. Bumazhnoi Prom., Materialy
x	d-1940		259	Oils and Fats Industry Masloboino-Zhirovaya Promyshlennost (Merged in Pishchevaya Prom., No. 75, in 1941)
o			260	Socialist Grain Economy Sotsialistich. Zernovoe Khoz.
o			261	General Reports of the Biology Institute, Rostov University Uchenye Zapiski Biol. Inst. Rostovsk Univ.
o			262	Transactions Conference Senility, Kiev
o			263	Reports of the Institute of Organic Chemistry and Technology Academy of Sciences Ukraine SSR Memoires Inst. Org. Chem. and Tech., Acad. Sci. Ukrain SSR
o	d-1942		264	Foreign Petroleum Technology (a US publication)
o			265	Transactions of the Institute of Geological Science Academy of Sciences Soyuz SSR, No. 11, Mineral-Geochemistry Section Trudy Inst. Geol. Nauk, Akad. Nauk Soyuz SSR, No. 11, Mineral Geokhim. Ser. (Some issues for 1947 and 1948 are in FDB)
x			266	Ukrainian Scientific Research Institute of Acid-Proof Refractories Ukrain. Nauch.-Issledovatel. Inst. Ogneuporov Fisloutoporov
x	d-1941		267	Gardens and Truck Gardens (USSR) Sady i Ogorody (USSR)
x			268	All-State Scientific Research Institute for Cement, Labor Department Vsesoyuz. Nauch.-Issledovatel. Inst. Tsement. VNI Ts., Sbornik Rabot (Since 1938, same as No. 244)
o			269	Safeguarding of Labor Okhrana Truda
x			270	Petroleum Industry SSSR Neftyanaya Promyshlennost SSSR (Published as No. 22 except from June 1940 through part of 1941)

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APPENDIX 13 (Continued)

Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
o	d-1941		271	Eastern Oil Vostochnaya Neft
o			272	Transactions of the All-State Institute of Refractories Trudy Vsesoyuz. Inst. Ogneuporov
o			273	Transactions of the Saratov Auto Highway Institute Trudy Saratov. Avtodorozhnogo Inst.
o			274	Transactions of the Sessions of the Academy of Sciences USSR Organic Chemistry Trudy Sessii Akademii Nauk po Organicheskoi Khimii
x			275	Transactions of the Voronezh Chemical Technology Institute Trudy Voronezhskogo Khimiko-Tekhnologicheskogo Instituta
		x	276	Transactions of Kharkov Chemistry-Technology Institute Trudy Kharkovskogo Khimiko-Tekhnologicheskogo Instituta im. S. M. Kirova
		x	277	Reports of Moscow University Vestnik Moskov. Univ.
		x	278	Archives of Pathology (USSR) Arkiv Patol. (USSR)
		x	279	Medical Sisters Meditsin Sestra
		o	280	Archangel Forestry Institute; Collection of Scientific Research Work Arkhangelsk, Lesotekh. Inst., Sbornik Nauch.- Issledovatel. Rabot
		o	281	Problems of Tuberculosis Problemy Tuberkuleza
		o	282	Science Bulletin, Leningrad State University Nauch. Bynull. Leningrad Gosudarst. Univ.
		o	283	Journal of General Biology Zhurnal Obshchei Biologii
		o	284	Reports of Pediatrics, Mother and Child Hygiene. Vestnik Pediat. i Okhrany-Materinstva: Detstva (Probably same as No. 293)
		o	285	Zoology Journal Zoologicheskii Zhurnal

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Abstracted by C.A. in Year			Code No.	Name of Journal
1941	1947	1948		
		x	286	Vitamin Research News (USSR)
		o	287	Transactions of the Energy Institute, Azerbaijan Academy of Sciences Trudy Energet. Inst. im I.G. Esmana, Akad. Nauk Azerbaidzhan
		x	288	Economic Journal of the Metal Trades Metall Ezhemesyachnyi Ekonomicheskii Zhurnal
		o	289	Transactions of Moscow Geological, Hydrological, and Geodetical Trust Trudy Moskovskogo Geologo-Gidro-Geodezicheskogo Tresta
		o	290	Transactions of Ural Industrial Institute Trudy Uralskogo, Industrialnogo Inst., im. S. M. Kirova
		o	291	Academy of Architecture USSR
		o	292	Scientific Records of Lenin State University of Moscow Uchenye Zapiski, Moskovskii Ordena Lenina Gosudarstvennyi Universitet im. M. V. Lomonosova
		o	293	Problems of Pediatrics and of Mother and Child Hygiene Voprosy Pediatrii i Okhrany Materinstva i Detstva (Probably same as No. 284)
		x	294	Transactions of the Institute of Plant Physiology Trudy Inst. Fiziol. Rastenii K. A. Timiryazeva
		x	295	All-Union Council Plant Physiology Vsesoyuznyi Soveshchaniye Fiziol. Rasteniv - Doklady
		o	296	Transactions of the Scientific Research Institute of the Gypsum Industries Nauch. Issled Inst. Gipsovoi Prom. Sbornik Trudov

Figure 1

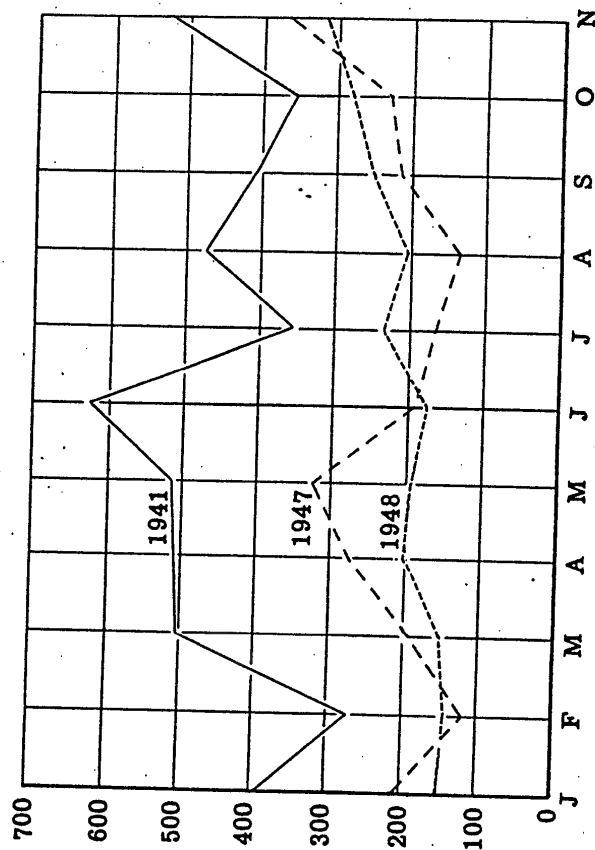
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Figure 1

*Number of Russian Journal Abstracts Appearing
in "Chemical Abstracts" Each Month During 1948, 1947, & 1941*

TOTALS OF ALL CATEGORIES

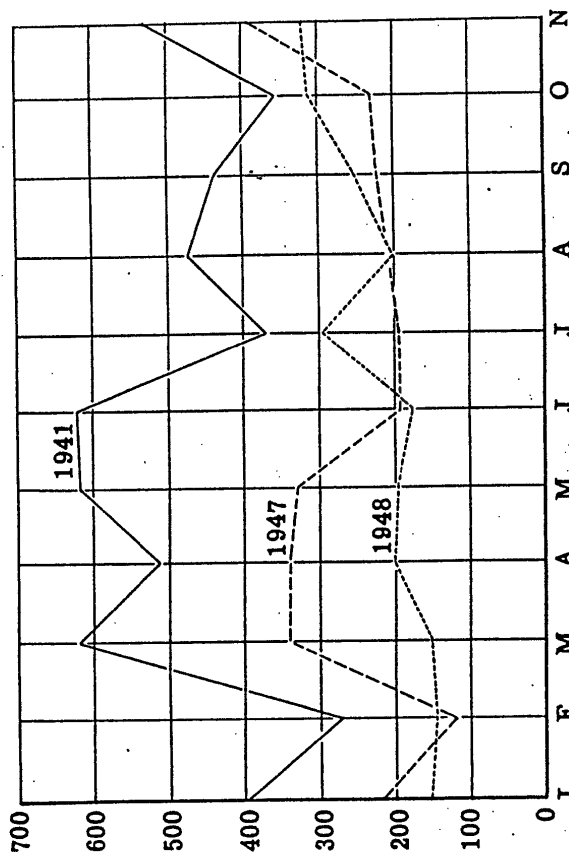


Total Number of Journal Abstracts in 1941 - 4,935
 Total Number of Journal Abstracts in 1947 - 2,436
 Total Number of Journal Abstracts in 1948 - 2,308
 1947 Percentage of 1941 - 49
 1948 Percentage of 1941 - 48

Figure 2

*Number of Russian Journal & Patent Abstracts Appearing in
"Chemical Abstracts" Each Month During 1948, 1947, & 1941*

TOTALS OF ALL CATEGORIES



Total Number of Abstracts in 1941 - 5,206
 Total Number of Abstracts in 1947 - 2,782
 Total Number of Abstracts in 1948 - 2,403
 1947 Percentage of 1941 - 53
 1948 Percentage of 1941 - 46

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NUMBERED CATEGORIES IN CHEMICAL ABSTRACTS

<u>Code</u> <u>No.</u>	<u>Category</u>
1	Apparatus, Plant Equipment, and Unit Operations
2	General and Physical Chemistry
3	Subatomic Phenomena and Radiochemistry
4	Electrochemistry
5	Photography
6	Inorganic Chemistry
7	Analytical Chemistry
8	Mineralogical and Geological Chemistry
9	Metallurgy and Metallography
10	Organic Chemistry
11	Biological Chemistry
12	Foods
13	Chemical Industry and Miscellaneous Industrial Products
14	Water, Sewage, and Sanitation
15	Soils and Fertilizers
15A	Economic Poisons
16	The Fermentation Industries
17	Pharmaceuticals, Cosmetics, and Perfumes
18	Acids, Alkalies, Salts, and Other Heavy Chemicals
19	Glass, Clay Products, Refractories, and Enameled Metals
20	Cement, Concrete, and Other Building Materials
21	Fuels and Carbonization Products
22	Petroleum, Lubricants, and Asphalt
23	Cellulose and Paper
24	Explosives and Explosions
25	Dyes and Textile Chemistry
26	Paints, Varnishes, and Lacquers
27	Fats, Fatty Oils, Waxes, and Detergents
28	Sugar, Starch, and Gums
29	Leather and Glue
30	Rubber and Other Elastomers
31	Synthetic Resins and Plastics

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CHEMICAL ABSTRACTS

Category

Salt Operations

Industry

Industry

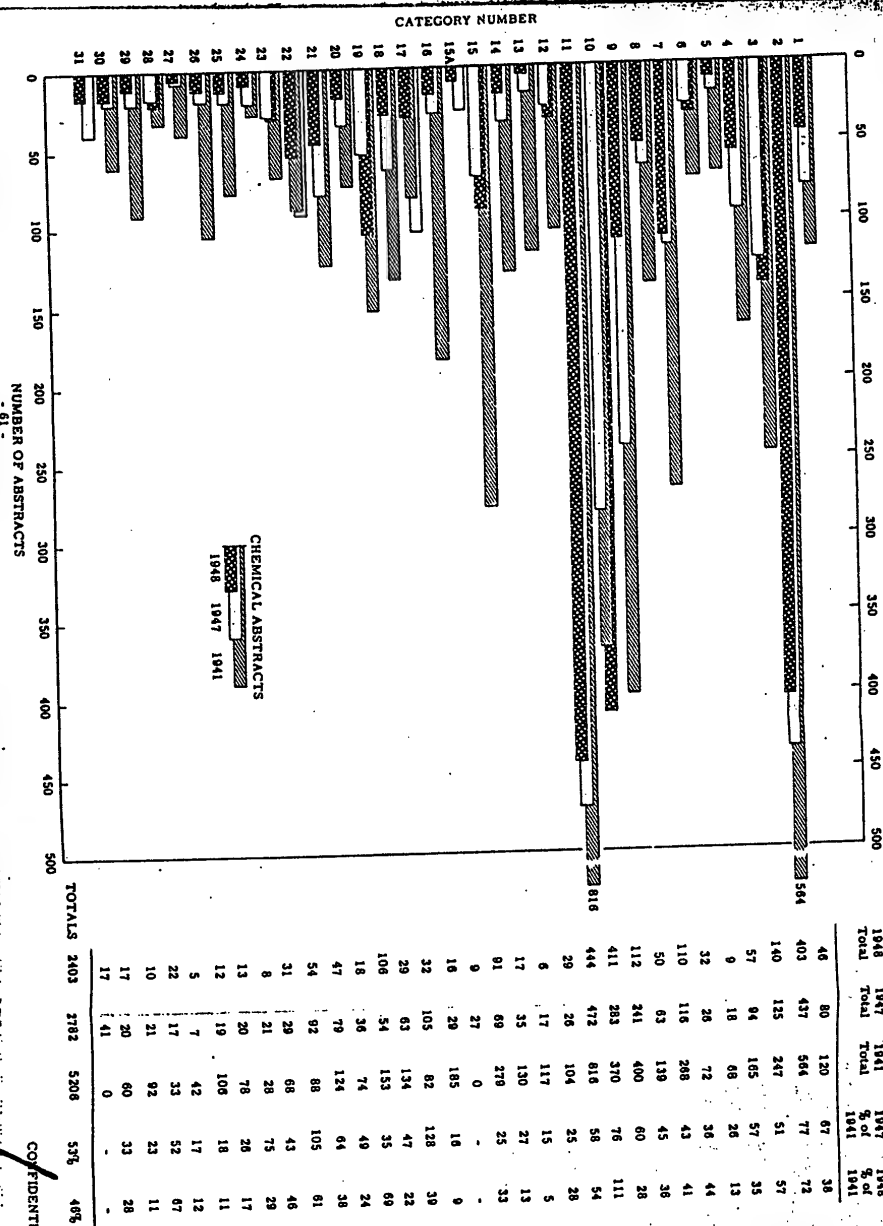
Industrial Products

Perfumes
Essential Oils
and Exposed Metals

Engineering Materials

Plastics

Comparisons of Total Number of Russian Journal & Patent Abstracts in "Chemical Abstracts" During 1948, 1947, & 1941

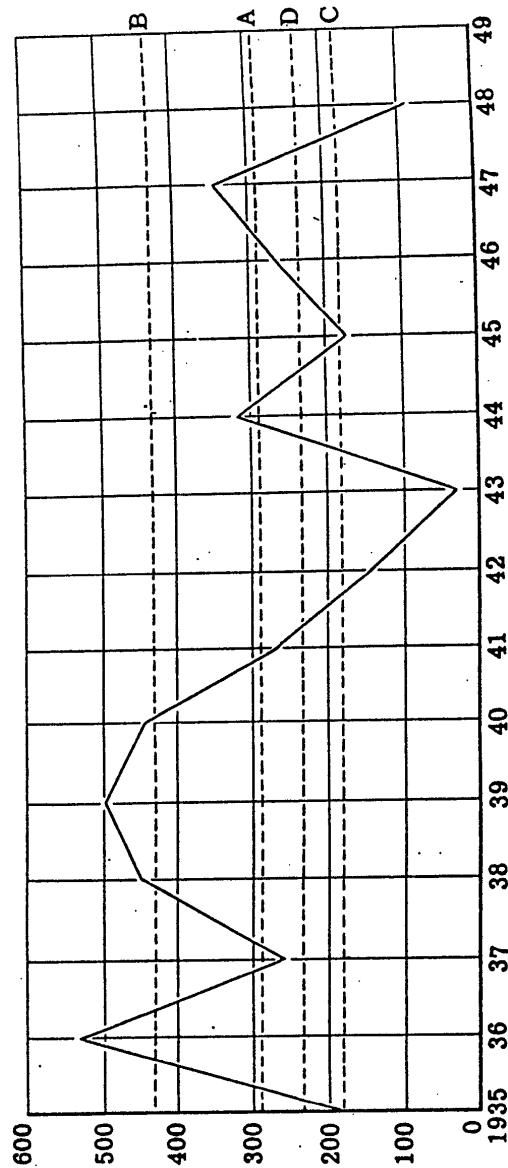


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Figure 4

*Number of Russian Chemical Patents Appearing in
"Chemical Abstracts" for Each Year 1935-1948*

TOTALS IN ALL CATEGORIES

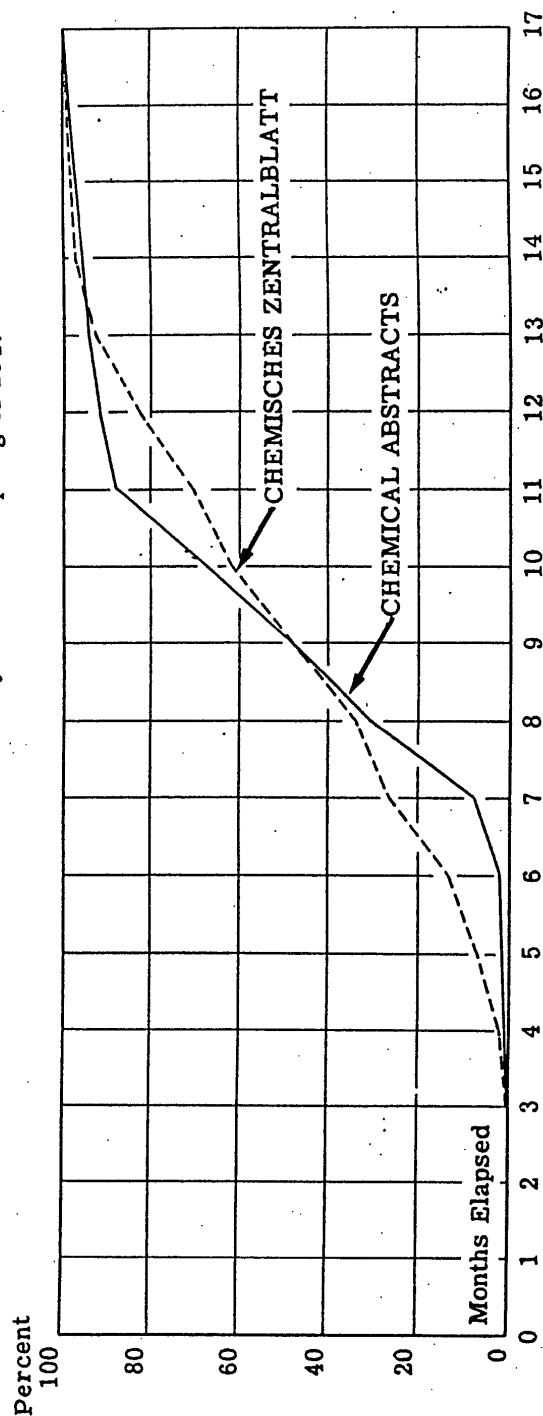


- A. Average per year, 1936-48, (294)
- B. Average for five pre-war years, 1936-40, (436)
- C. Average during five war years, 1941-45, (187)
- D. Average for three post-war years, 1946-48, (235)

Promptness of Abstract Coverage of Russian Articles

RELATION OF MONTHS ELAPSED BETWEEN PUBLICATION OF ORIGINAL AND WHEN AVAILABLE IN ABSTRACT FORM AND PERCENT APPEARING IN "CHEMICAL ABSTRACTS" AND "CHEMISCHES ZENTRALBLATT" BY MONTHLY INTERVALS

Period covered is approximately 8 weeks in Spring of 1947



NOTE: Russian publications are frequently not distributed for weeks to months after stated date of issue. "Months elapsed" refers here to this hypothetical issue date and does not represent the real time lag before abstracts appear.

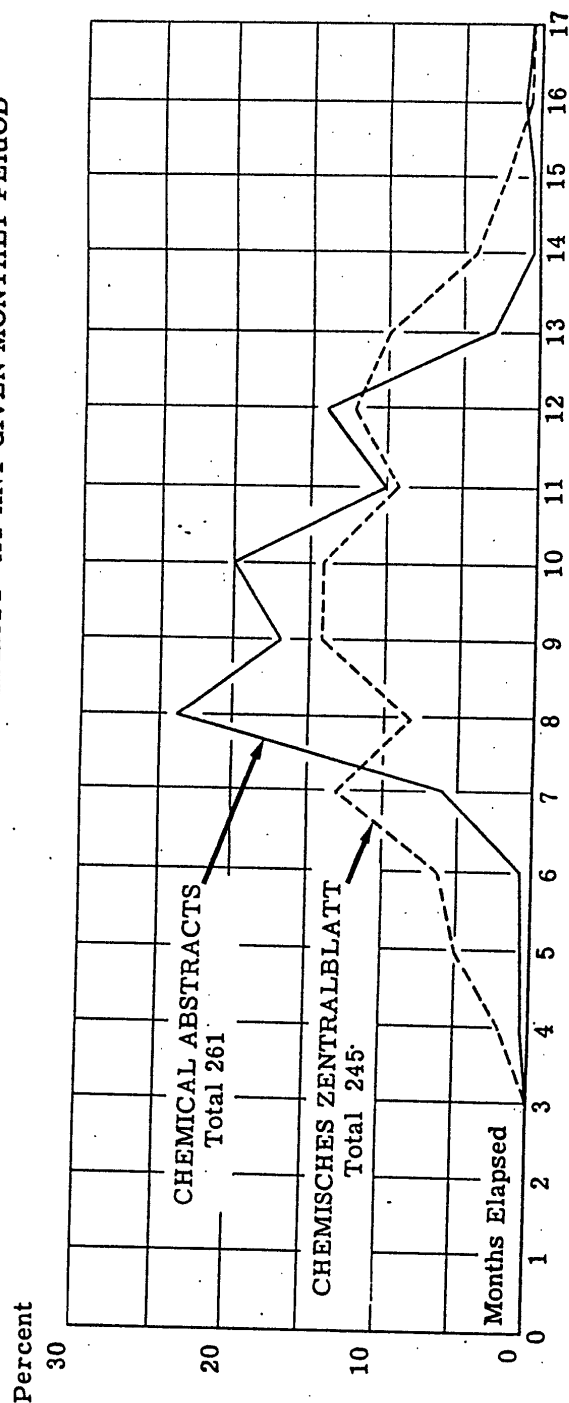
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Figure 6

Promptness of Abstract Coverage of Russian Articles

SHOWS MONTHS ELAPSED BETWEEN PUBLICATION OF ORIGINAL AND DATE AVAILABLE IN ABSTRACT FORM AS RELATED TO PERCENT APPEARING IN "CHEMICAL ABSTRACTS" AND "CHEMISCHES ZENTRALBLATT" AT ANY GIVEN MONTHLY PERIOD



NOTE: Russian publications are frequently not distributed for weeks to months after stated date of issue. "Months elapsed" refers here to this hypothetical issue date and does not represent the real time lag before abstracts appear.

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Completeness and Promptness of Abstract Coverage of Russian Chemical Literature

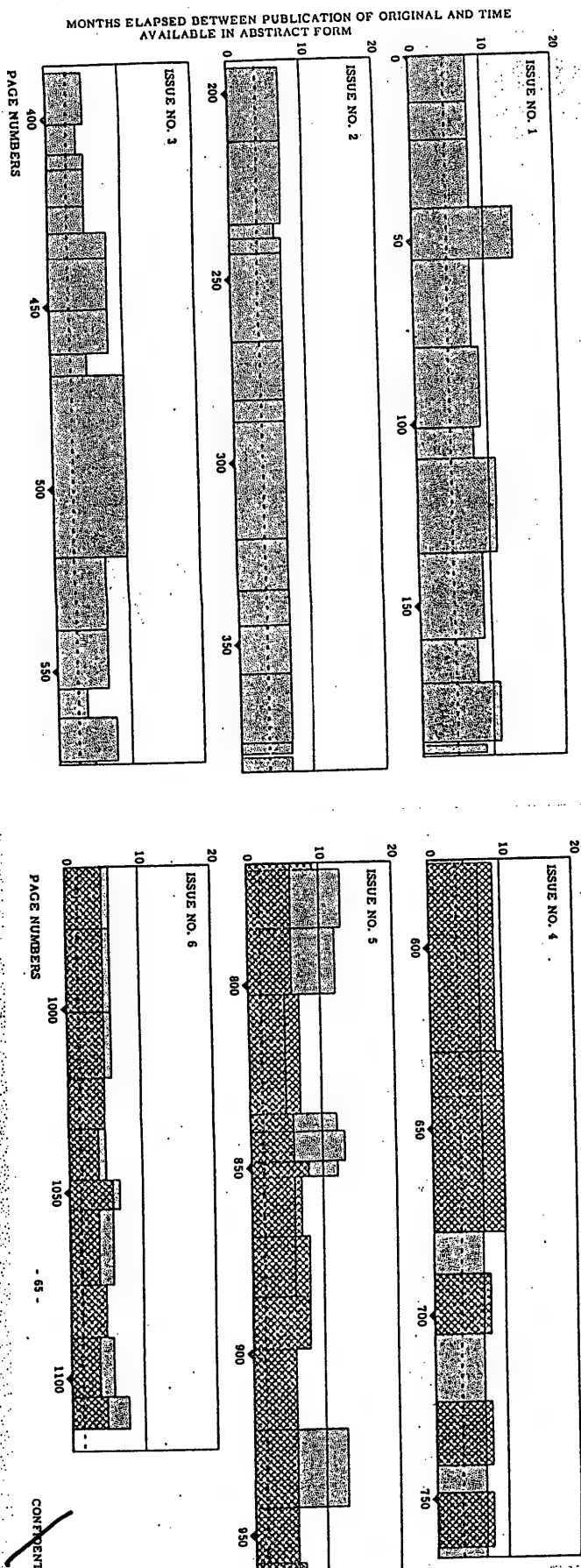
SHOWS COVERAGE AND TIME ELAPSED BEFORE ARTICLES IN ACTA PHYSICOCHEMICA, U.S.S.R. VOLUME 21, 1946, ARE AVAILABLE IN ABSTRACT FORM THROUGH "CHEMICAL ABSTRACTS" AND "CHEMISCHES ZENTRALBLATT"

LEGEND

Chemical Abstracts

Chemisches Zentralblatt

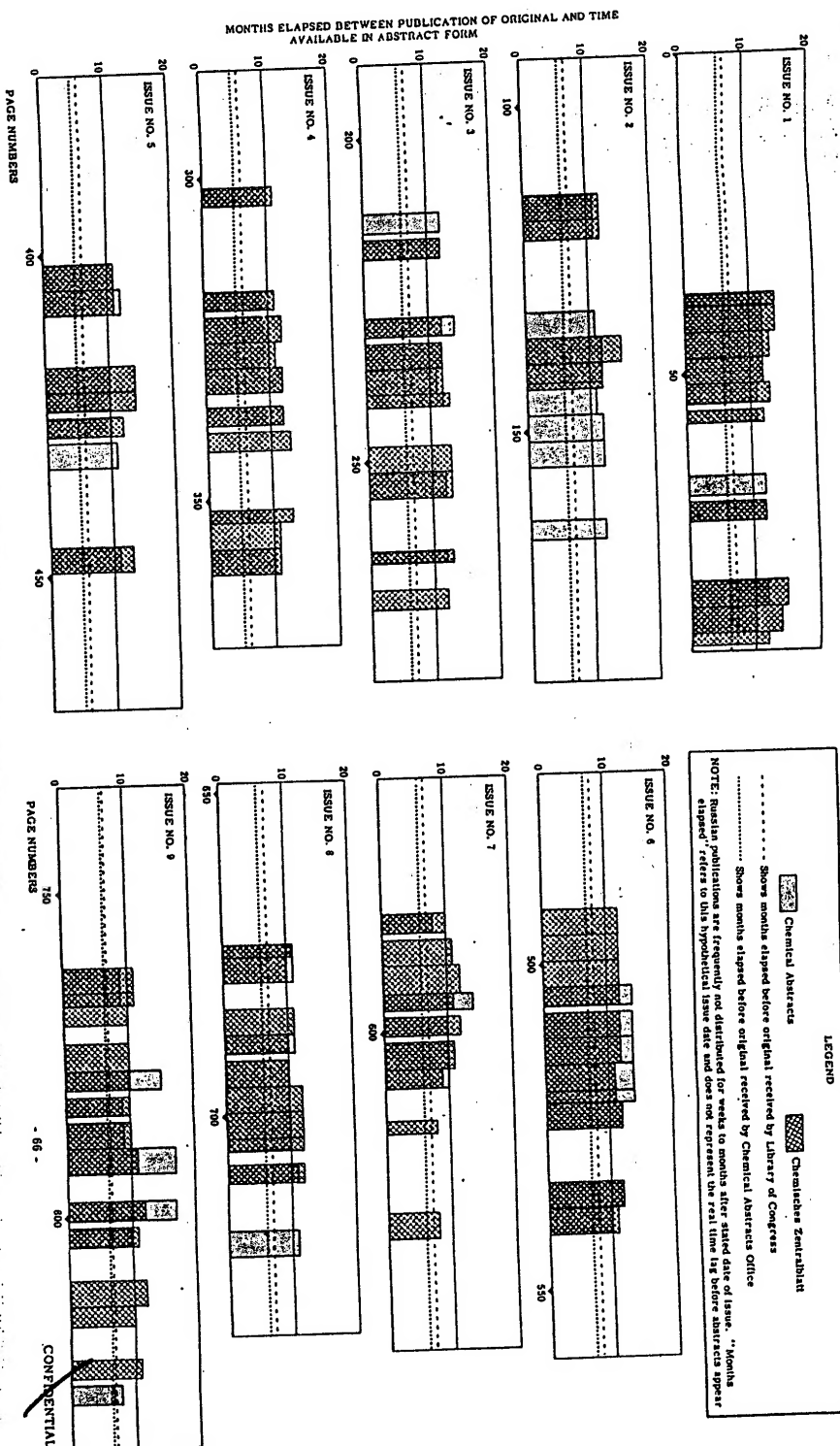
NOTE: Russian publications are frequently not distributed for weeks to months after stated date of issue. "Months elapsed" refers to this hypothetical issue date and does not represent the real time lag before abstracts appear



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Completeness and Promptness of Abstract Coverage of Russian Chemical Literature

SHOWS COVERAGE AND TIME ELAPSED BEFORE ARTICLES IN C. R. ACADEMY OF SCIENCE
U.S.S.R. VOLUME 31, 1964, ARE AVAILABLE IN ABSTRACT FORM THROUGH
"CHEMICAL ABSTRACTS" AND "CHEMISCHES ZENTRALBLATT"

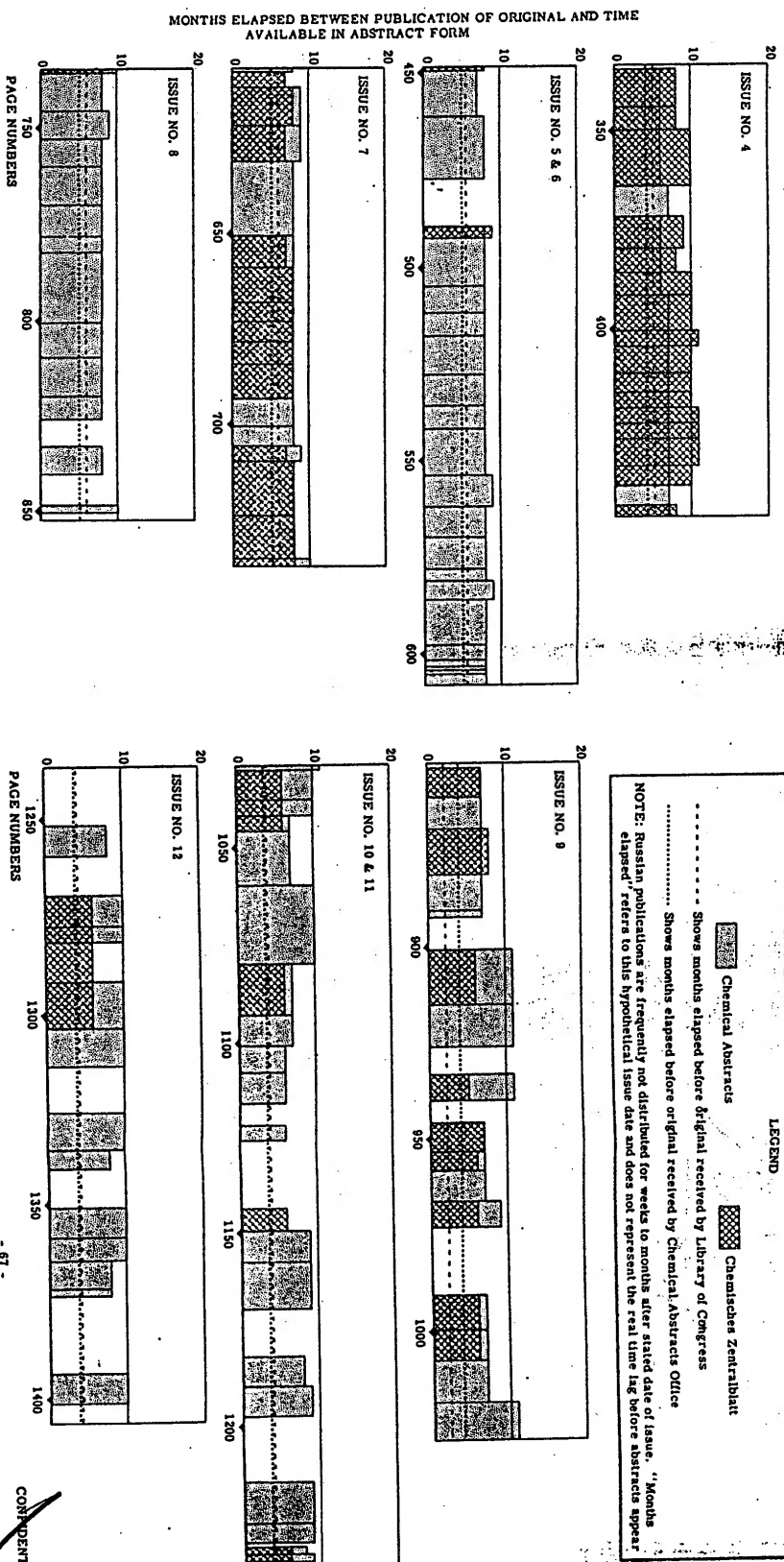


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Completeness and Promptness of Abstract Coverage of Russian Chemical Literature

SHOWS COVERAGE AND TIME ELAPSED BEFORE ARTICLES IN JOURNAL OF APPLIED CHEMISTRY, U.S.S.R. VOLUME 19, 1946, ARE AVAILABLE IN ABSTRACT FORM THROUGH "CHEMICAL ABSTRACTS" AND "CHEMISCHES ZENTRALBLATT"



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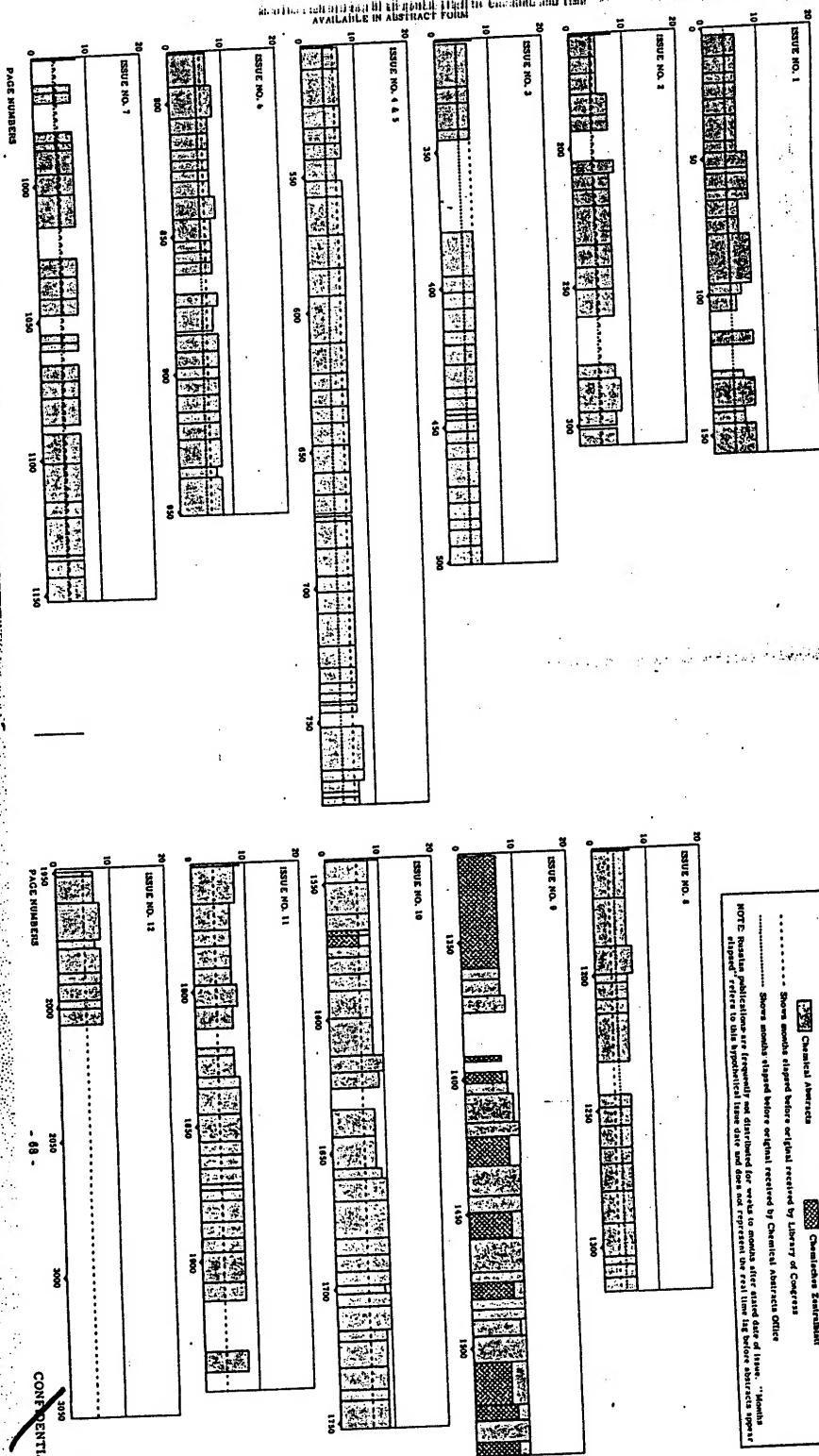
Figure 9

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Completeness and Promptness of Abstract Coverage of Russian Chemical Literature

SHOWS COVERAGE AND TIME ELAPSED BEFORE ARTICLES IN JOURNAL OF GENERAL CHEMISTRY, U.S.S.R. VOLUME 18, 1948, ARE AVAILABLE IN ABSTRACT FORM THROUGH "CHEMICAL ABSTRACTS" AND "CHEMISTRY SERVICE BUREAU"



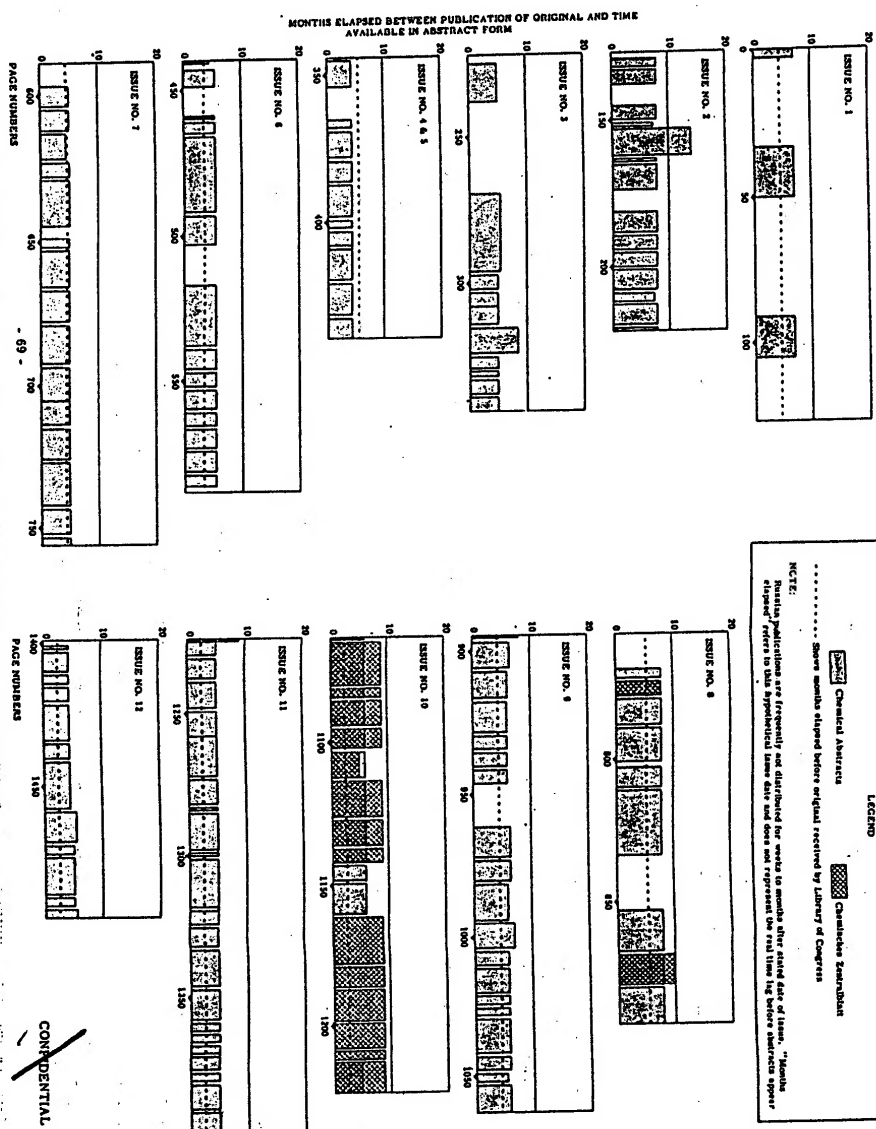
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Completeness and Promptness of Abstract Coverage of Russian Chemical Literature

SHOWS COVERAGE AND TIME ELAPSED BEFORE ARTICLES IN JOURNAL OF PHYSICAL CHEMISTRY, U.S.S.R. VOLUME 20, 1946, ARE AVAILABLE IN ABSTRACT FORM THROUGH "CHEMICAL ABSTRACTS" AND "CHEMISTS' SERIALS/LITERATURE"

Figure 11



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